

# COAL AGE

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## Your Troubles

BY FLOYD W. PARSONS

A LOT of men and women continue to talk of their troubles and are grieved because the world doesn't stand at attention while their distress is relieved.

In America today there are countless people who look out on the horizon of their lives and, seeing a glow-worm, think it is a conflagration.

The fact that the fate of all humanity now hangs in the balance is second with them to the fact that one of the children is sick and the mortgage is due.

Why, man, do you not know that all former standards for measuring happiness and sorrow have been destroyed? Mrs. Smith next door has a wonderful son already sleeping in a grave in France, and Mrs. Jones across the street has a Red Cross daughter destroyed by a Hun bomb and buried in alien soil. What are your troubles to these?

You say that your business has been cut in half. Do you not know that hundreds of corporations have had to close up entirely due to the war? You cry out that the cost of your everyday necessities is abnormal. Are you not aware that more people have died of starvation in Europe and Asia this year than have succumbed to enemy bullets?

This is no day to whine and practice self-pity. It is a time that calls for decision and action. All worthwhile things are difficult. We learn by trying. Every day we delay our fight means a stronger enemy. And while we are hammering away, let us grin; there is a big difference between a grin and a smile.

The trouble is not our inability to bear adver-

sity, but rather our inability to forget prosperity. Let us think more of the unconquerable spirit of the people who inhabited devastated Belgium, and we will be less conscious of our own trifling sacrifices.

Sorrow, like ill weather, comes without being sent for; but it will pay no debt and add nothing to the force of our effort. We might as well try to catch the wind in a net as to expect victory from a nation of weepers. It is our sacred duty to strangle the grumblers and mourners.

Griefs appear swift and remedies slow, but time tames the greatest sorrow. No mine or mill can set a new high figure for production if the men working there are morose and dreary.

Let us chase away the joy slacker. We must pool not only our material forces, but our glee forces. The man who holds the ladder is as bad as the one who climbs up it into your house and steals your goods. Any person in America today who goes about shrouded in gloom is as much a member of the Kaiser's army as the surly Prussian who carries a gun.

We are up against a de-humanized nation, a country whose soul has been shriveled and benumbed by the poison of hate and self-worship. We are fighting a people devoted to scientific barbarism—a government whose record of broken treaties and hideous cruelties goes back as far as its history. In order to win and forever silence the Huns and their Kaiser, who impudently anoints himself as the "Sword of God," we must forget our petty troubles and present a cheerful nation behind a cheerful army.

*Grin and Work and Fight.*

## IDEAS AND SUGGESTIONS

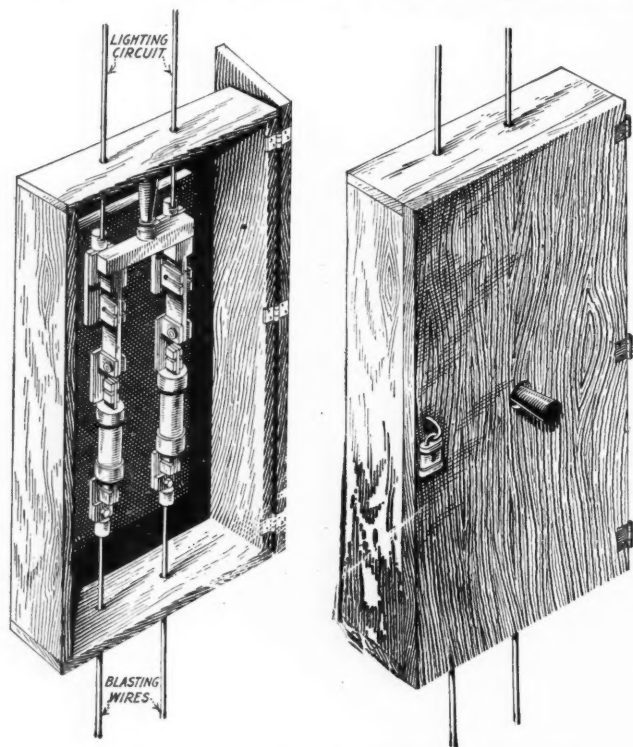
### Blasting with the Lighting Circuit

BY THOMAS J. PASCOE

The following method of blasting, which is practiced in a mine in the vicinity of Norway, Mich., is sure to explode every hole: The current is taken from a 110-volt lighting circuit, and the charge is fired by means of a single-throw knife switch, connected as shown in the illustration. The switch is provided with fuse plugs. To explode 15 holes, a 10-ampere fuse is required. The blasting wires are so connected with the switch that, by closing the latter, they are cut into the lighting circuit.

The switch is placed in a wooden box, with a hole cut in the door, as shown. When the door is closed, the handle of the switch projects outside. This is done so that the miner may know positively that the switch is not in contact with the live wires before he attempts to connect his blasting wires to the charge. Otherwise a serious explosion may occur.

The miners prefer the method detailed to the old way with batteries, as it never fails to explode every



KNIFE-SWITCH USED IN EXPLODING CHARGES

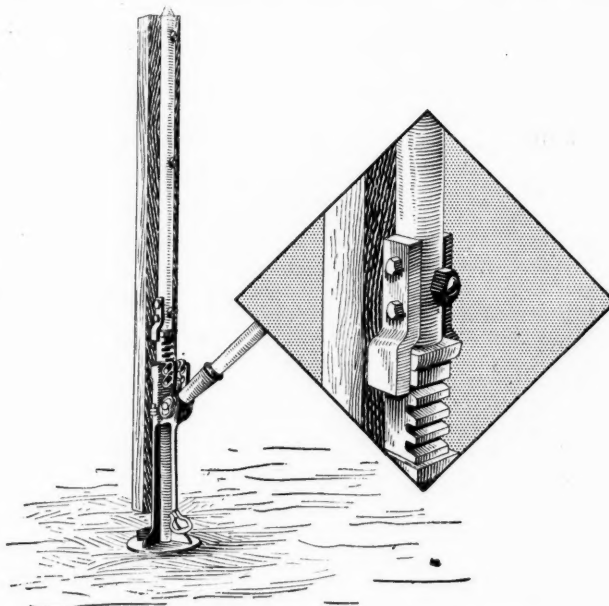
hole at the proper time. The switch box should always be kept locked, and the key be given to the man responsible for the blasting. The knife switch should be placed with the live connections up. Then in case the door should be left open, and the handle drop, it would not come in contact with the live wires.—*Engineering and Mining Journal*.

### A Quickly Adjusted "Jack-Prop"

BY HARRY GOODNOW

Du Quoin, Ill.

When a fire is raging at the face of an entry or room the first efforts put forth are to advance a canvas brattice up as close to the seat of the fire as possible in



THIS JACK-PROP IS RAPIDLY ADJUSTED

order to clear away the smoke so that the actual work of putting out the conflagration may commence.

How many practical mining men who read this have carried, into the suffocating smoke, a prop and tried to set it only to find it too long or short. Then with lungs ready to burst a hurried effort is made to guess at or measure the proper length, the heavy timber is hauled out and replaced or cut into supposed size, when another effort is made to set the right length of prop, which goes into place—maybe.

To obviate these troubles and delays a "jack-prop" was devised (as shown in the accompanying illustration). This is composed of two parts, as its name implies, any jack and a piece of pipe socketed to fit the top of the jack. This pipe has a wooden strip bolted to it upon which to nail the canvas.

A supply of these pipes, easily made by the mine blacksmith, and of different lengths, can be kept in a car together with canvas, fire extinguishers, etc. Upon the alarm of fire one man with a mule can take in this car, while another, acquainted with the mine, can quickly gather a few jacks to keep things moving.

Of course, these "jack-props" can be replaced with common props as soon as the smoke is cleared out, thus allowing a few used over and over again to carry the canvas an indefinite distance.

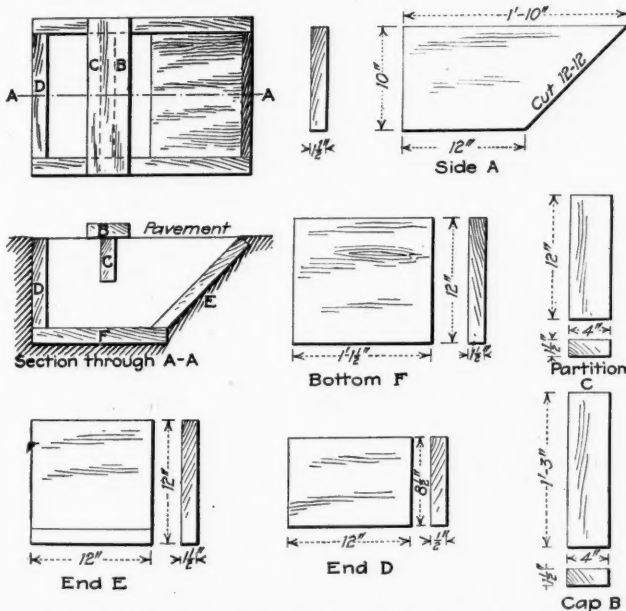
## An Effective Air Trap

The old rhyme about "Little drops of water, little grains of sand," etc., might, so far as coal mining is concerned, be paraphrased somewhat as follows: Little drops of water, Running as they can, May mean a mighty air leak, And perhaps a fan. The air trap here described will effectually stop one kind of air leak that is at times quite troublesome.

One advantage of the construction shown in the accompanying illustration is that when the vertical side for the box is placed toward the flow of water a fall is formed that tends to keep the sediment in the bottom stirred up and washed out over the slanting side. Furthermore, where the flow of water is unsteady or intermittent, the trap stands full of water and prevents leakage.

A trap of the dimensions shown is large enough to handle the discharge from an 8-in. pipe and an air pressure up to 4 in. of water. For a greater volume of water, the box may be made longer. Confining each side or member of the box to one piece of plank lessens the number of joints that are liable to leak.

The top of such a trap should be set even with the bottom of the ditch carrying the water. The slant-



ing or discharge side should be so placed that a shovel may be used if necessary to clean out the box.

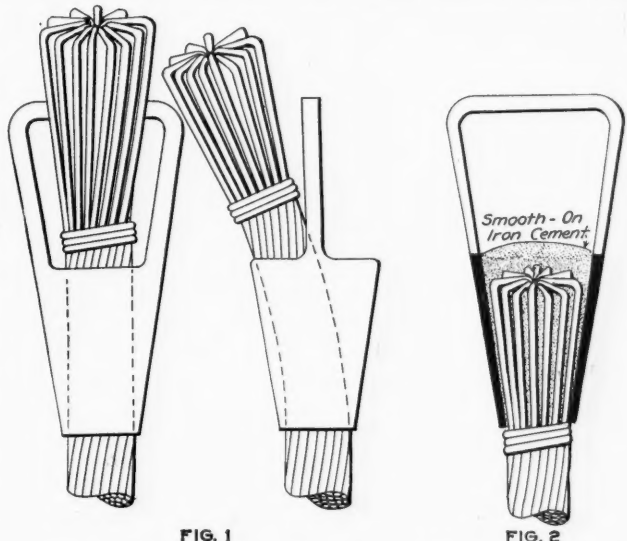
Tile bends are sometimes used in place of these traps. However, there are less satisfactory than boxes similar to the one shown, as they are more difficult to clean and more liable to break.

## New Way of Socketing Wire Ropes

Many ropemen who have experienced difficulty in making a satisfactory joint when placing a forged socket on the end of a wire cable will doubtless be interested in a new method developed by John T. Willison, of Ambridge, Penn. Mr. Willison, who was testing 19-strand cables for tensile strength, was particularly interested in making a joint which would be stronger than the

cable itself. After trying several methods unsuccessfully, the joint failing in each case before the cable was loaded to capacity, he finally conceived the idea of securing the cable in the socket with iron cement in the way shown in the illustration.

The cable end was first passed into the socket, as shown in Figs. 1 and 2. One of the outside wires was



FIGS. 1 AND 2. METHOD OF PASSING CABLE END INTO SOCKET

untwisted and wrapped tightly around the others. Above this wrap the remaining wires were untwisted and belled out as shown, and the ends turned down. "Smooth-On" Iron Cement No. 1 was mixed with water to a smooth putty-like consistency, and the socket packed closely with this material. The cable was then pulled firmly into place and the cement allowed to metallize. In metallizing, the iron cement expanded to such a degree that it completely filled the spaces between the wires and between the cable and the socket shell and thus wedged the joint securely. A firm union resulted, which, on test, proved to be stronger than the cable itself.

A bunsen burner can be used to show how mixing air with a flame affects combustion. When the air supply is turned off the flame from a bunsen burner is luminous. Its luminosity is due to incandescent particles of solid carbon resulting from the decomposition of hydrocarbons in the gas. The interior of the flame contains no oxygen to burn the hydrocarbons, and they are decomposed by heat into hydrogen and carbon. When the air is mixed with the gas as it enters the burner, the flame is nonluminous and has a well-defined inner cone. In this inner cone the oxygen of the air combines with hydrocarbons of the gas, producing  $H_2$  and  $CO$ , which burn on the outer envelope of the flame. The reactions in the presence of oxygen produce gases that are easily burned, whereas the carbon produced in the absence of air is difficult to burn. Similarly, air mixed with volatile matter in the furnace before the tar is decomposed by heat may produce a larger proportion of combustible in the form of gas and less in the form of carbon.—Bureau of Mines Bulletin No. 135.



# Orient Mine of Franklin County, Illinois

BY GEORGE W. HARRIS  
Editorial Staff "Coal Age"



FIG. 1. ORIENT PLANT OF THE CHICAGO, WILMINGTON AND FRANKLIN COAL COMPANY

IF ALL the 324 commercial shipping mines of Illinois would produce as much coal in a year as the Orient mine of the Chicago, Wilmington & Franklin Coal Co. did last year, this country would be provided with one-half of the whole amount of bituminous fuel needed to supply 1918 requirements. Illinois is a great coal state and has some wonderful plants. The Orient mine is about 3½ miles northwest of West Frankfort, in Franklin County, Illinois, where big production is taken as a matter of course.

Standing on the hilltop adjacent to and overlooking Orient town, a person can readily see some of the big producers of this famous section. There are 14 mines around Orient, within a radius of about seven miles, which are producing 50,000 tons of coal daily. Among those participating in this good work are the Old Ben Coal Corporation plants near Christopher to the northwest; the U. S. Steel Corporation's Middle Fork, Benton Coal Co. and Chicago, Wilmington & Franklin mines at Benton on the northeast; the Byproduct Coke Corporation plants, Old Ben No. 8 and No. 9, and West Frankfort mine around the town of West Frankfort on the southeast, and the Ziegler property a few miles west. For the year ended June 30, 1917, this remarkable group of mines, including Orient, produced over 9½ million tons of coal, which was one-eighth of the total production of the state, while these 15 mines were only the 1/22 part of the 324 commercial shippers of Illinois.

The Orient mine is located on a 12,000-acre property, on which two additional plants of about the same capacity as the existing mine will be located. The No. 6

seam here runs from 9 to 12 ft. thick, and if it persists over the whole tract at an average thickness of 10 ft., the property will contain about 212 million tons of coal of this seam alone. It is expected that the new plants will incorporate some of the latest ideas in development which have come to be considered especially applicable to mining in Franklin County. The underground workings will also (similar to Orient) include isolating panels, which are most desirable in case of fire in the mine or an explosion taking place.

On Nov. 12, 1917, the Orient mine made its record run (which is also the record for this field) of 5508 tons of coal dumped in eight hours—this on a single-cage hoist. Needless to say, the cage is the self-dumping type; it is the Olsen pattern, made by the Eagle Iron Works, of Des Moines, Iowa. On the day the writer was at the plant 4900 tons were hoisted in eight hours; this coal was loaded by 441 men, or an average of about 11 tons per loader. In the year ended June 30, 1917, this mine shipped 1,100,000 tons of coal in 272 working days or part days that the mine operated, or about 4050 tons per day on an average. A number of conditions are necessary to enable a record run to be made, conditions which seldom prevail on many consecutive days. Car supply and labor have been erratic for the past year or so, making it increasingly difficult to even maintain normal production let alone record tonnage even for short periods.

The hoist at the Orient tippie is 600 ft. from the landing at the bottom of the shaft to the dump; the dump is 80 ft. above the surface. The No. 6 seam mined



here runs from 9 to 11 ft. in thickness and carries the characteristic blue band, which runs from  $\frac{1}{2}$  to  $\frac{3}{4}$  in. in thickness at about  $1\frac{1}{2}$  ft. up from the bottom. The bottom rock is fireclay and the top a shale. The latter does not stand well when the coal is removed, making it necessary to leave up about 2 ft. of top coal in the rooms (at least until the rooms are finished) and 3 ft. in entries as a roof. Near the top of the No. 6 coal in Franklin and Williamson Counties is a persistent parting, at which the coal of the main bench easily separates from the top coal; these two benches

sections of the state. The greatest depth of cover over the No. 6 bed occurs in this general section. Damages for injury to surface would be much more serious in the case of mining a thick seam with little cover where the farm values were high than with low-priced land, as great disturbance to surface would inevitably take place on removal of such a thick bed with little cover.

The room-and-pillar panel system of mining is used at the plant in question, as shown in Fig. 2, which includes a portion of the mine west of the shafts. The rooms are turned on 40-ft. centers—18-ft. pillar and 22-

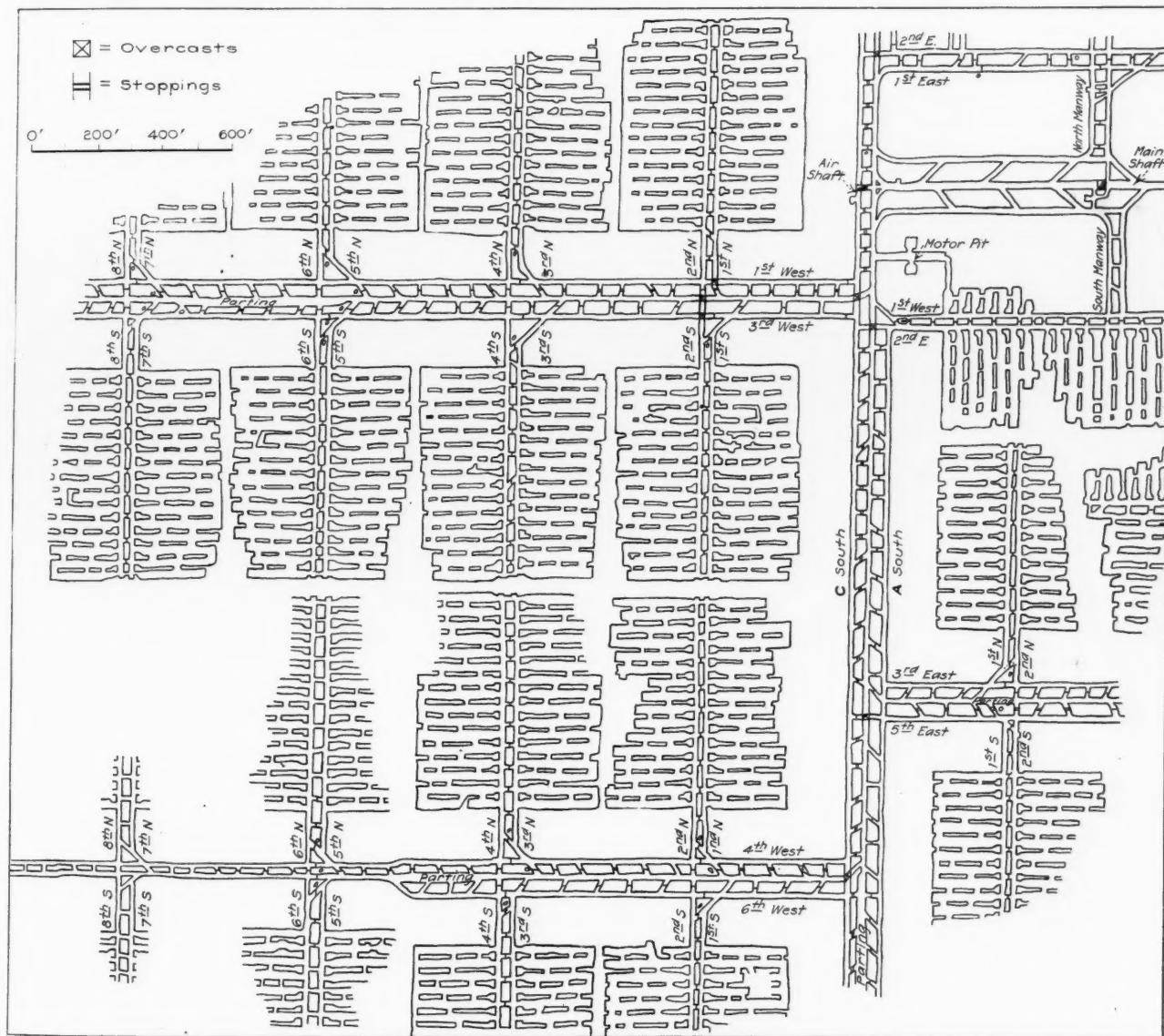


FIG. 2. MAP OF A PORTION OF THE ORIENT MINE SHOWING METHOD OF MINING

vary in thickness. At some operations the top bench is the best coal in the mine, the ash running from 3 to 3½ per cent., while the ash content of the lower bench may run from 6½ to 9½ per cent. The heating values of the two benches are in inverse proportion to the ash content, the top bench having the greater heat values when the ash content is lower than in the bottom bench.

From the operator's standpoint nature seems to have favored Franklin and Williamson Counties doubly, in the sense that the coal is thicker than in most other sections and the values of farm lands are as low as any, and considerably lower than in most of the coal-bearing

ft. room; they are worked to a depth of 250 ft. Each panel has 16 rooms on each side of the double stub entry. A pillar of coal 20 ft. wide is left between the ends of finished rooms, and the main entries are protected by pillars 150 ft. in width. The 16-room panels are separated by 50 ft. of solid coal. Thus each group of 32 rooms has no connection with the balance of the mine, except where the stub entries connect with the east and west main entries. The shafts are protected by a pillar of about 20 acres in area. The north and south mains are also on the three-entry plan up to the last parting, and double entry from that point to the boundaries. In

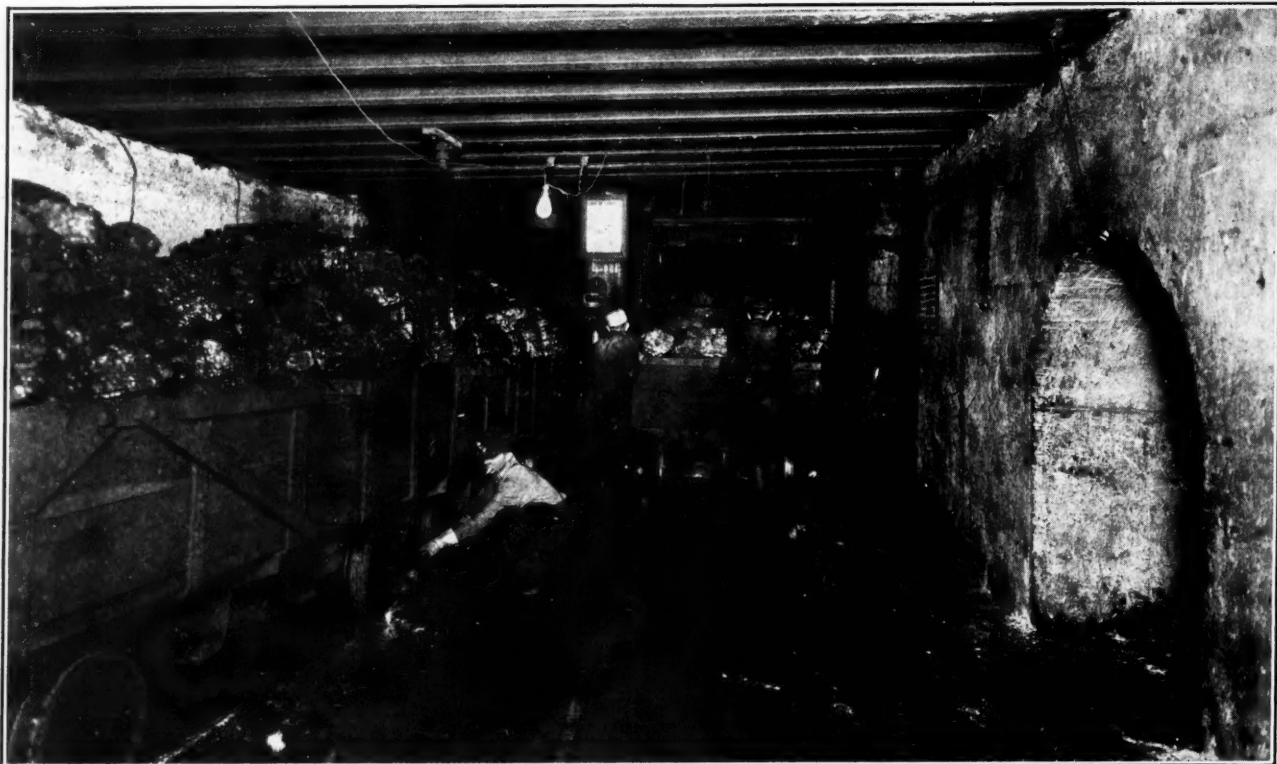


FIG. 3. MODERN SHAFT BOTTOM OF THE ORIENT MINE

the case of the triple entry, the center entry is used for haulage; the entry nearest the hoist shaft is the intake; the entry farthest from the hoist shaft and also the haulageway are the return.

As soon as panels are worked out they cave, break to the surface and close. The top coal and as much of the pillars as practicable are recovered, which gives an extraction of from 55 to 60 per cent. Mining in Illinois has undergone some changes in the last few years, perhaps the most notable improvement being the adoption of the panel system by the more progressive operators. Until quite recently little system was practiced by most Illinois operators. The result was most disastrous, except as regards temporary low cost of production. In 1909 George S. Rice, of the United States Bureau of Mines, wrote a paper for the American Institute of Mining Engineers on "Mining Wastes and Mining Costs in Illinois," in which he states: "The influencing conditions causing the great losses that are at present incurred are: (1) Cheapness of coal in place—that is, in the seam. (2) Low market prices, resulting from extreme competition. (3) Character of the seam, roof and floor as determining the method of mining. (4) Surface subsidence due to mining. (5) Interfaced boundary ownerships. (6) Carelessness in mining operations."

The great extent of coal territory offered for sale in Illinois resulted in transfers of coal rights at extremely low figures. Many mines were opened up, and the coal markets were greatly overstocked. All this tended to cause excessive competition and loose mining methods. Thick seams and a shale top which readily weathered encouraged the leaving up of top coal to save expense; this method, carelessness in mining operations and damage suits for subsidence of surface, all resulted in large loss of coal from varying causes.

Since 1909 conditions have changed. Coal lands have enhanced greatly in value, and there is a tendency to the acquirement of large holdings by big interests and development on an extensive scale. There was a growing interest in better methods of mining, greater recovery of coal, less loss through squeezes and more attention to the claims of those owning surface over mine workings. The outcome was an extensive Federal and state investigation into the whole situation and several reports on coal mining in Illinois, with special reference to percentage of extraction. A number of the large companies gave the matter individual attention and instituted reforms, possibly the most noteworthy improvement being the adoption of the panel system of mining and greater system as to proper proportion of pillar to room width and size of pillar to suit the various conditions of top.

With adjustment of the selling price of coal to permit of a respectable profit being made by the operator, another and important incentive was established for better mining. The map of the mine (Fig. 2) accompanying this article illustrates the panel system of mining, the advantages of which are too well known to need much comment. It is especially well adapted to the improvement of conditions in Illinois, in that it tends to localize squeezes which were of such frequent occurrence as to be notorious throughout the state.

Among the interesting features of the Orient underground workings is the shaft bottom shown in Fig. 3. It is typical of the best development in shaft bottoms, in which I-beams support the roof and in turn rest on side walls of concrete. Concrete is a permanent investment in mines, especially in those workings which are as free from water as is the average Illinois mine, with sufficient cover to do away with much danger of large surface breaks. If mine water contains much



sulphuric acid it is said to be detrimental to ordinary concrete. Concrete is used extensively at and around the shaft bottom here, in cases where a permanent support of the roof is essential and the side walls should be kept up. When the side walls and top are white-washed and the place lit up by electricity, the operations of moving cars and attending to various duties about the shaft bottom, partings and other busy underground places are not only much simplified but the chances of accident are greatly reduced. It seems to be easier to have a place kept clean and in order when the brightness of day is present. At the bottom a cager is in use which was made by the American Safety Device Co., of Bowers-town, Ohio—it is installed at many big producing mines.

The cars shown at the shaft bottom hold about  $4\frac{1}{2}$  tons of coal on an average; depending on the topping, they may hold five tons. The cars have Sanford-Day (Knoxville, Tenn.) "Whitney-wonder" roller-bearing wheels, which together with 45-lb. rails contribute to ease of haulage on main line roads. For such service three 15-ton, General Electric, "armor plate" locomotives are used. Six or eight-ton General Electric trolley motors are used for gathering cars, and 21 of these locomotives are necessary at this mine. It requires motive power to move 5500 tons of coal from face to shaft bottom in eight hours.

The coal is undercut by 35 Sullivan shortwall mining machines. This machine is shown at work in a room at the Orient mine, Fig. 4; it is about to make a sump-ing cut. The Sullivan Machinery Co., of Chicago, Ill., the maker of the machine noted, states that the use of mining machines in the United States has advanced from 545 machines in 1891, when 6,211,732 tons (or

6.66 per cent. of the entire output) was won by machines to 16,198 machines in use in 1911 (the latest year reported), in which 283,691,493 short tons (or 56 per cent. of the total production) were mechanically mined. Several feet of the upper part of the seam is left up temporarily to support the top in this mine as the rock immediately overlying the coal is a shale which gives trouble at certain seasons when unprotected. It is important that such top especially should not be disturbed more than necessary by shots. In machine mining shooting off the solid is practically eliminated, with its attendant injury to top, greater percentage of slack and less lump coal.

In Fig. 5 the coal has been undercut and the shots placed, and the shotfirers are represented as about to fire the shots by lighting the fuses. In the next illustration, Fig. 6, the coal has been shot down and is ready to be loaded. After a close inspection of Fig. 5, a person would not expect such good results as shown in Fig. 6, from the fact that the undercut has not been snubbed. But the shots evidently were well placed and gaged, for the coal seems to have been thrown out well and to be in good shape for loading. In Fig. 7 the loaders have about cleaned up the face of loose coal. The men shown in the room give a good idea as to the height of the seam. Also there is ample room between the car and the roof to permit of loading without much difficulty and to allow generous topping with lumps of coal.

There are about 700 men at the Orient plant, of which number 500 are loaders, 50 are machine men and 150 inside and top company men.

The town of Orient is about  $3\frac{1}{2}$  miles northwest of

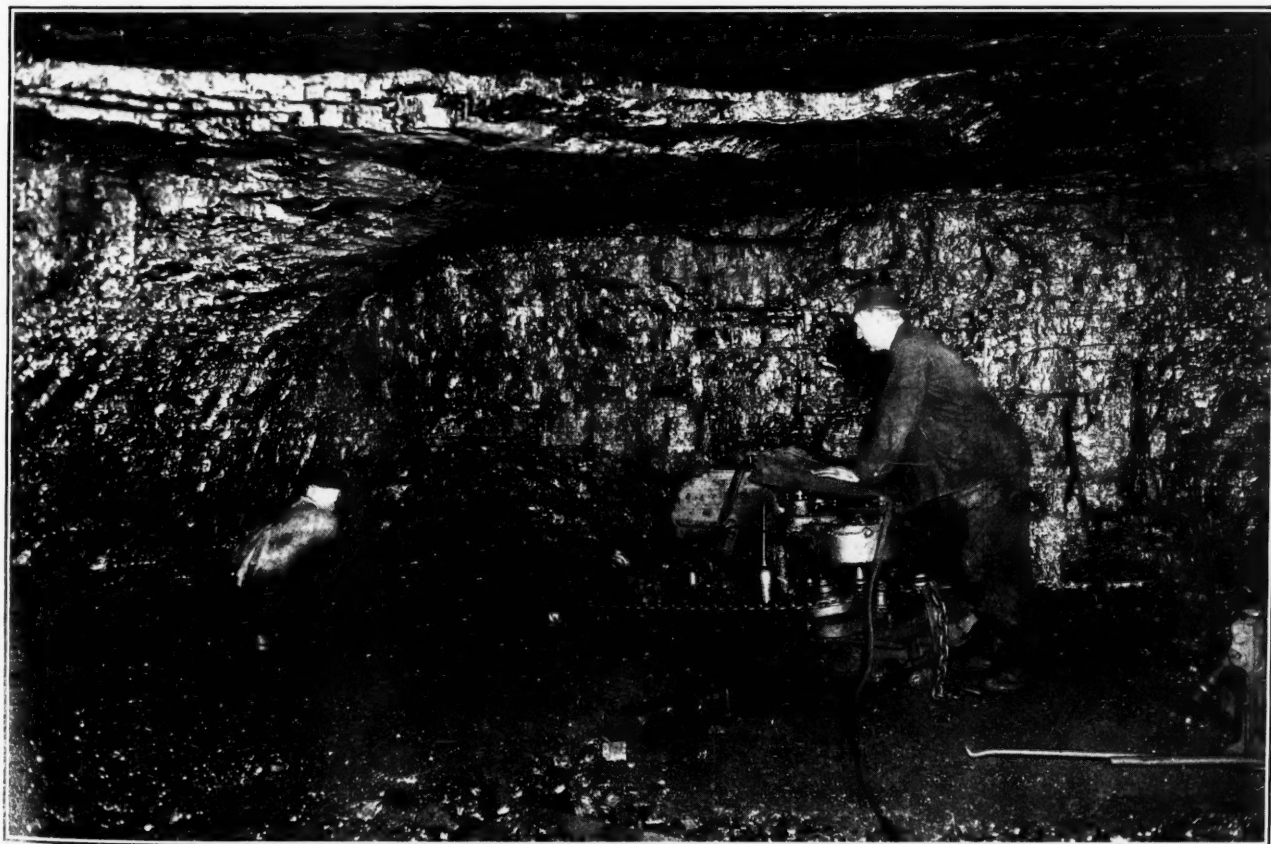


FIG. 4. SULLIVAN SHORTWALL MINING MACHINE AT WORK IN ORIENT MINE





FIGS. 5, 6 AND 7. WORKING FACE AT THE ORIENT MINE  
Fig. 5—Shotfirers lighting the shots. Fig. 6—Immediately after the shots have blown down the coal. Fig. 7—Loading the coal into cars

West Frankfort and the Chicago, Wilmington & Franklin Coal Co. runs a miners' train in to the mines in the morning and back to West Frankfort at night, for the accommodation of those employees desiring such service. About 60 per cent. of the men live in the town of Orient, including all office and other organization men. The town at the plant has all grown up in the last two or three years. The company has been building a number of frame houses for \$1200 each down, and rents them to its employees or sells them on easy payments. Some 75 to 80 houses have been sold and sales are being made all the time. Also houses are being rented as fast as they can be built.

The vacant acreage so generally noticed in the vicinity of towns in mining regions is partly utilized in the case of Orient. A garden club has been organized, and prizes have been offered for the best garden. The benefits growing out of this activity are manifold. Outside of any material gain in garden produce is the improved appearance of otherwise waste ground about mining towns and the betterment of the morale of the community. Any movement which tends to attract the better class of labor and induce it to buy homes in the town at the mine will simplify problems of management.

A large capacity plant has different problems from one of small output. When the big producer lies idle, overhead charges quickly reach large figures and many employees are affected. During the last year or so, especially when transportation was erratic or entirely inadequate to the needs of operators, storage was resorted to in some cases to enable the mines to run with some degree of regularity. At the Orient mine the trestle system of storage was installed. On either side of this trestle are several parallel tracks on which two 20-ton clam-shell bucket locomotive cranes operate; these machines were built by the Link-Belt Co. When rail-

road cars were not available for shipping coal at the tipple it was loaded into 15 side-dump cars which emptied at the storage trestle. The 2-yd. clam-shell cranes piled the coal back from the trestle when necessary to permit greater storage, and also reloaded it into railroad cars at other times. Each crane has loaded 20 to 50 railroad cars a day on occasion. This scheme relieved the car-shortage situation and gave an opportunity to hoist; thus the 700 men at the Orient mine were given a chance

to work full time. The trestle is kept as a reservoir; it is an elasticity proposition for steady output. The tonnage has sometimes been restricted by the men not coming out to work at times when they had an opportunity to do so. Shipment of coal from Orient can be made over any of the following three railroads, which supply cars to the mine: Chicago, Burlington & Quincy, Chicago & Eastern Illinois and the Illinois Central.

It is interesting to note the performance of the plant in question during the past few years, in which time it has passed from a new mine to the leading producer of Franklin County. In the calendar year of 1915 it shipped 500,000 tons of coal; in 1916, 830,000 tons; in 1917, 1,100,000 tons; and for the 12 months ended April 1, 1918, this mine shipped over 1,200,000 tons of coal. The best month's work was 120,421 tons. To make the fine record (5508 tons in eight hours) which this plant holds, it was necessary to dump three mine cars per minute, each car holding  $4\frac{1}{2}$  to 5 tons of coal. As an average daily tonnage of 5200 can be maintained, the management claims that the plant easily has a capacity of 6000 tons in eight hours. Larger capacity has been mentioned in the case of some plants now building, but a mine in Illinois able to achieve that record today would be considered a safe top-notch, for a time at least. Among others the Orient people con-

sider that the main effort at present is to get coal—and then more coal—and they consider it a patriotic duty to see that everything is done at the mine to achieve this end.

In the recent sale of Liberty Bonds (the third loan) the company subscribed and then arranged a plan so that its employees could make easy payments for bonds subscribed for through the company. In the loan in question 1760 employees subscribed for \$136,350 of bonds through the company Liberty Loan club; many others subscribed direct through banks and paid in full. A splendid showing was made on a wide distribution. Also in the Red Cross drives this company apportioned a part of its subscriptions to the counties in which it was operating mines, which subscriptions were heavily supplemented by the subscriptions of individual employees.

The Chicago, Wilmington & Franklin Coal Co. operates six other mines in Illinois. This company purchased mines A and B at Herrin, Williamson County, of the Chicago & Carterville Coal Co. The other plants are at Benton, Franklin County; at Virden, Macoupin County; at Thayer, Sangamon County, and at South Wilmington, Grundy County, respectively. The trademark slogan of Orient coal—"Hot and Bright Like Anthracite"—is full of significance and carries conviction, for the coal makes a fine appearance on cars, as it is clean and bright, stocks well, and is remarkably free from sulphur and less smoky than some grades.

The operating officials of the company are George B. Harrington, president and general manager; T. F. Holmes, general superintendent, and D. J. Carroll, assistant general superintendent. At the Orient plant Joseph Lewis is mine superintendent; G. M. Meagher, mining engineer, and John Rodenbush, mine manager. At the main office in Chicago, and also at the plant at Orient, the writer received the most courteous treatment in his quest for information, photographs and maps, and acknowledgment is here gratefully given for such favors.

### Automatic Circuit Breakers in Coal Mines Effect Real Economies

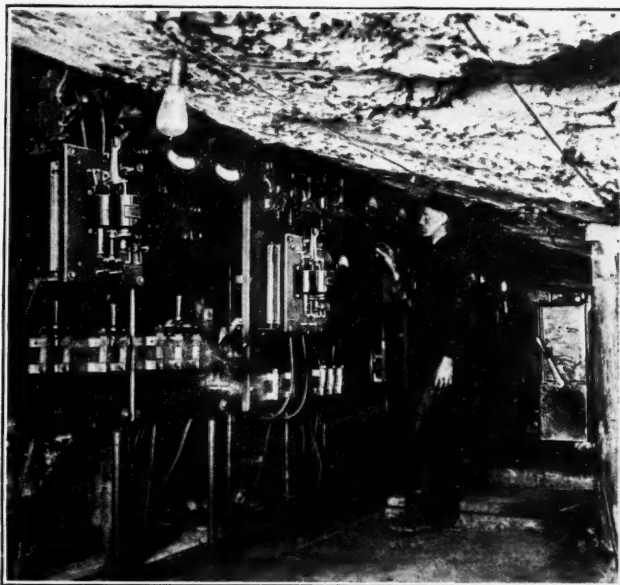
Coal mines in the Central West which use electric power for operating coal cutters and haulage locomotives are finding economical applications for circuit breakers of the automatic reclosing type. At ordinary mines, with a power house or substation above ground feeding direct current to switchboards under ground, a single large breaker is usually installed at the station and another one for each branch circuit is installed at the underground boards.

To facilitate the operation of such a system a 1200-amp. automatic reclosing circuit breaker is installed in the substation, while below ground two 600- and one 400-amp. reclosing circuit breakers are placed on the switchboard. Each of the latter is connected into a circuit running far out into the workings. If now a short circuit or heavy overload should come on one of the 600-amp. lines on account of a "cave-in" tearing down a trolley wire or from some similar cause, the 600-amp. breaker would open the circuit and keep it open until the trouble was cleared up, whereupon it

would automatically reclose. This would not interrupt the men working in places served by the other circuits. If the "cave-in" was not serious, the miners could make sure that the breaker would stay open by grounding the circuit with a chain or crowbar placed between the trolley and the rail. They could then clear, cutting the trolley wire if necessary. With this original ground cleared the chain or crowbar could be carefully removed, allowing the breaker thereupon to close of its own accord.

If the opening of a breaker were caused by a severe overload, and the breaker was of the manually operated type, work would have to be held up while word was sent to the switchboard to close the switch. With the automatic reclosing circuit breaker this delay would not be necessary, because as soon as the load was reduced to the value at which reclosure was desired the breaker would close automatically.

A low resistance shunt around the reclosing coil to the ground prevents the breaker from alternately



SWITCHBOARD INSTALLATION EQUIPPED WITH RECLOSING CIRCUIT BREAKERS

opening and closing at high speed under short-circuit conditions. It will either remain open or closed as conditions justify. The practice of installing an automatic breaker at the substation is usually followed because the attendant is not always right at hand and this unit is required to protect the station apparatus. The rating of this breaker is usually less than the sums of the ratings of those on branch circuits on account of diversity.

In some mines the installation of this apparatus is effecting real savings in money and in labor. One mine which formerly paid a man \$5 a day to sit at its switchboard under ground and see that a 1200-amp. breaker remained closed has now replaced this arrangement with an automatic breaker at a total cost of \$600. Thus in less than 120 days the mine had its money back, and during that time and ever since it had the productive labor of another man. The usual installations are smaller than this, requiring breakers of 100 to 400 amp., which can be installed for \$135 to \$150.



# Coal Mining and Man Power

By F. A. POCOCK  
Philadelphia, Penn.

**SYNOPSIS**—*At a time when the supply of available men is low and decreasing, and the output per man is also low, any means to increase the output per man should be given careful consideration. The longwall method of mining with certain modifications would appear to be a means whereby the output might be increased.*

**D**ISREGARDING the anthracite region, for what I have to say does not apply there, this country is short of men who are versed in coal mining. The heads of departments are still on the job, and the thinking power of the industry still has its hand on the wheel and can be relied upon to steer the ship. Should this class fail, we still have the mining force of the Government to fall back on for the thinking. Possessed of this, is there no way of increasing the tonnage per worker? Can the thinker not make the worker more productive?

The following is submitted for careful consideration of the men who must do the producing. The fact that three tons per man per day is above the average production in the coal mines of the United States is in itself alarming. It means that the average man is only producing \$9 per day, and that he is not working more than 70 per cent. of the possible days in the year.

Now there are a great many bituminous mines to which the following will not be applicable. At all events, however, it applies to the whole bituminous field of the State of Pennsylvania, and therefore to probably one-fourth of the national industry.

The time has come when the merits and shortcomings of the longwall method of working must be considered. Every phase of the system should be carefully taken into account. It is over 30 years since the Scott Co. in the Youghiogheny Valley section, under William S. Gresley, proved this system out. Mr. Gresley was a master in the art, but even he was hampered by the death of Scott. The interests succeeding Scott forced Gresley's resignation.

## COST OF MINING FAVORS LONGWALL

Today we are in a totally different condition as regards electric power, locomotives, coal cutters, loading devices, and the lack of man power for the industry. Personally I have not the necessary data to give a résumé on the subject; but the costs of mining by longwall, as against the room-and-pillar method without electricity and all that it implies, was generally vastly in favor of the longwall. It therefore stands to reason that if the coal cutter can cut a face 300 ft. in length without having to move ten times, each of these moves involving the time necessary to travel an average of at least 200 ft. over mine rails, the loading of the machine, unloading and setting up again

(which must involve at least one-half of the working time), the machine and its two men would be able to undercut at least twice the amount of coal that it can under room-and-pillar conditions. This does not only mean that the cutting expense will be reduced more than half, but that the same man power will produce twice the quantity of coal at twice the power cost. This will furthermore be achieved at one-half of the labor cost and at roughly one-half of the overhead costs.

## MAY BE FEASIBLE TO USE CONCRETE PROPS

In longwall methods of working the roof must be supported near the face. This involves the use of considerable timber. It is customary not to set props and headpieces, but to build cribs allowing a slight slant from the side near the working face toward the waste ground that has been worked out. Here is where great economy can be practiced. It is necessary to allow the roof to come down gradually, so the lowest pieces can be short lengths of wood that will crush under the load. Above these well-seasoned concrete pieces can be used up to near the roof, where again the last packing, to insure an even load, can be of wood that will take the crush. As most of the concrete pieces will not be injured by the pressure they can be used again and again. There have been a number of references to the use of concrete in mining timbering, but it would seem that if it were adaptable anywhere it would be in longwall work, where all the crushing stress can be supported by adequate sections and the material be recovered and used repeatedly. The necessity for props will be reduced to the few places where the roof is locally bad and must be held to prevent accident to the men working the machines.

As the coal cutters will leave a fairly flat floor, the setting of the cribs will be an easy problem and the wood foundation and finish pieces can be made almost a standard as soon as the finished height of the seam is determined. In this way the cost of timber and timbering can be materially reduced from what it is in the room-and-pillar system.

There is no more heart-breaking work in a thin bed of coal than loading into the car, and there are no loading machines that will work in even a 4-ft. seam. There is, however, no difficulty in designing a conveyor that can operate in less than 2 ft. of height, nor any difficulty in driving a 300-ft. (center to center) length of such conveyor by electric motor. As this is fairly flexible, it can be on such a floor as a coal cutter will leave. It will be necessary to have height in the haulage road, and as these beds usually have a clay floor the cost of making the necessary height will be less by taking up floor than by taking down roof. This also gives the advantage that the top of the car will be little, if any, above the floor of the longwall face. Therefore the coal will not have to be loaded, and the conveyor end can be raised the



necessary distance to allow the coal not only to clear the top of the car but to be taken almost across it; also, the loading can be done without manual labor. It will be necessary to have a second machine working at an angle to the conveyor to load the coal broken down onto the conveyor, but as this can also be electrically driven, and of simple design, there is every argument in favor of its being built.

The method of handling the trip of cars will depend largely on the strength of the roof, on how far back this will stand up of sufficient height to allow the cars to be pushed beyond the loading point of the conveyor. This would of course be the cheapest method of handling the trip. But even if the roof is short and breaks close up, by using a small motor-and-rope transfer and a double track the switching of the cars under the loading end of the conveyor will be a rapid process if flat plates are used as a terminal instead of rails. By this means the loaded car can be sent out after the empty is brought up to its side, or slightly beyond, and the empty be hauled back under the conveyor, against a guide rail which will easily force it over if the wheel flanges are on a flat plate. Thus little, if any, time need be lost in switching the car to the loading point.

#### FIFTY MEN SECURE 500 TONS A DAY

A 300-ft. face in a 3-ft. bed, with a 6-ft. undercut will give 200 cu.yd., or roughly 250 tons of coal. From a haulage point of view this tonnage should be handled in eight hours. The coal cutter should also be able to make cuts of 300 ft. each in an eight-hour period.

It will therefore require two locomotives and two loading machines to give an output of 500 tons per day. The man power for the foregoing operations only will be:

Coal cutter.....	2	Locomotives.....	4
Loading device.....	2	Shot drillers.....	4
Conveyor control.....	2	Shotfirer.....	1
Car handlers.....	2		
		Total.....	17

At an average wage of \$5 this will amount to \$85. This would give a wage cost of only \$0.17 per ton. The costs for track and timbermen, cleaning up and other necessary operations are not so easy to estimate, but if the foregoing cost items are doubled, there will still be a large factor left in favor of the longwall method of working.

The tipple, road and overhead costs will not be much affected, except that the road-repair cost may be slightly raised because the tonnage moved is heavier. At all events, here is a basis for considerable discussion. Practical mining men should consider the foregoing from their own standpoint and from local mining conditions, and see if they cannot modify it so as to secure local success. A greater tonnage per man when men are of the greatest value to the whole world is well worth securing.

One thought more. Assuming that it will take double this number of men to keep these 17 at work; or if, say, 50 men can secure an output of 500 tons per day, we will have raised the tonnage per man per day to 10 from, we will say, the best, or 4. In other words, this would mean an increase of 250 per cent. Is this not worth attempting?

### Colorado Meeting of A. I. M. E.

The American Institute of Mining Engineers will hold its meeting in Colorado from Sept. 2 to Sept. 7, and the program will be as follows:

#### SUNDAY, SEPT. 1

Registration at Brown Palace Hotel, Denver.

#### MONDAY, SEPT. 2

- 9:00 a.m. Technical Session on Metallurgy. Automobile trip to the ferro-alloy plant and other points of interest in Denver, followed by mountain trip.
- 1:00 p.m. Luncheon at Hosea Lodge in Genessee Park, Lookout Mountain.
- 7:00 p.m. Dinner at Country Club, Denver.

#### TUESDAY, SEPT. 3

- 8:15 a.m. Entrain for Colorado Springs.
- 11:00 a.m. Arrive Colorado Springs. (Headquarters, Broadmoor Hotel.)
- 12:00 noon Memorial to Dr. James Douglas.
- 1:00 p.m. Luncheon at Broadmoor Hotel.
- 2:00 p.m. Technical Sessions, Ore Dressing and Cyanidation; Coal and Coke. Moving Pictures of Employment of War Cripples in Industry.
- 8:30 p.m. Reception and dance.

#### WEDNESDAY, SEPT. 4

- All-day trip to Cripple Creek.
- 8:00 p.m. Technical Session, Geology and Mining.

#### THURSDAY, SEPT. 5

- 8:00 a.m. Automobile trip to Pike's Peak.
- 2:00 p.m. Visit to Golden Cycle Mills.
- 4:00 p.m. Memorial Meeting for Members of the Institute who have given their lives in the Service of the Allies.
- 8:00 p.m. Technical Session, Petroleum. Moving Pictures of Employment of War Cripples in Industry, especially in regard to Mining and Metallurgy.

#### FRIDAY, SEPT. 6

- 8:30 a.m. Entrain for Pueblo.
- 12:30 p.m. Luncheon at Minnequa Steel Works, Pueblo.
- 7:30 p.m. Banquet, Broadmoor Hotel, Colorado Springs.

#### SATURDAY, SEPT. 7

Optional visit to Leadville and Red Cliff.

The program for the entertainment of the ladies is still in a formative stage and has not been announced. At the session on coal and coke the following papers will be read in brief and discussed: "The Byproduct Coke Oven and Its Products," by William Hutton Blauvelt; "The Use of Coal in Pulverized Form," by H. R. Collins; "Coal Mining in Washington," by F. A. Hill; "Carbocoal," by C. T. Malcolmson, with written discussion by W. R. Cox and N. W. Roberts; "Development of the Coke Industry in Colorado, Utah and New Mexico," by F. C. Miller; "Price Fixing of Bituminous Coal by the United States Fuel Administration," by Cyrus Garnsey, R. V. Norris and J. H. Allport.

In the combustion of coal the law of mass action manifests itself by the fact that in boiler furnaces considerable excess of air above the theoretical requirement is necessary to insure complete combustion within the furnace. If the air supply is reduced to nearly the theoretical amount the combustion is so slow that a large percentage of the gases may leave the furnace before they are burned.

# Provincial Rights Dispute in Canada

By ROBERT DUNN

Victoria, B. C.

**SYNOPSIS**—*Title to a large part of the coal-bearing lands of Vancouver Island are in dispute. A review of the half century that has elapsed since the white man's occupation of this region reveals that all parties have apparently acted in good faith. There has, however, been an overlapping of the prerogatives of the Province and the Dominion.*

FOR many years, a bitter dispute has been waged as to the title to a considerable proportion of the coal-bearing lands of Vancouver Island, British Columbia. An event of recent date promises to bring this struggle into national prominence by plunging the Government of the Province of British Columbia into a controversy with the Dominion Government at Ottawa over the question of provincial rights.

Meanwhile, to sum up the situation in a few words, the Canadian Collieries Co. (Dunsmuir) Ltd., finds its title to extensive island coal areas confirmed; the Granby Consolidated Mining and Smelting Co. is in a position of some doubt as to its proprietary right in coal areas, the development of which already has cost hundreds of thousands of dollars; while the early Vancouver Island settlers, who claim the coal rights in lands occupied by them in pioneer days and whose claims have been maintained by the Provincial Government, see ahead a continuance of the fight, with the issue shrouded in uncertainty.

Before going further let me explain, briefly, what is at stake. The accompanying map of Vancouver Island shows the Esquimalt & Nanaimo Ry. belt, stretching from the southerly extremity of the island northward along the east coast. Incidentally there will be found marked the chief coal-mining centers of Ladysmith, Nanaimo and Cumberland. This belt covers an area of 3296 square miles. It is one-fifth of the total acreage of Vancouver Island and its actual reserve of bituminous coal, to quote the 1915 report of B. D. Dowling, of the Canadian Geological Department, is placed at 1,060,000,000 short tons. With these facts in mind it is not difficult to understand the determined effort being made by the rival claimants.

The recent event referred to is the disallowance by the Dominion Government of provincial legislation passed early last year and known as "An Act to Amend the 'Vancouver Island Settlers' Rights Act, 1904.'" In other words the federal authorities have said to the province, in effect: "You have gone beyond your power in giving to settlers this opportunity to acquire the coal under the lands which they homesteaded. The title in question has been otherwise vested and the Act is *ultra vires*." I understand that all this is meaningless and without significance to one outside British Columbia who never heard of the matter before, but it will be appreciated that, with the gantlet thus thrown down, it is more than probable that the province will

take whatever measures are available to assert and maintain what it deems to be the legislative rights conferred upon its government when it became a part of the Canadian Confederation.

It is necessary in endeavoring to make the situation clear to look back over half a century. Vancouver Island then was a wilderness. There was a Hudson Bay post at Victoria, the capital of the province now, and a settlement at Nanaimo, B. C. Coal had been discovered near the latter town and at some other points. The late Robert Dunsmuir, who became the coal baron of western Canada, was the first to enter into coal mining in this section to any extent. Between 1860 and 1871 quite a number of settlers went on the lands, the title to which is now in dispute, and under the law of that day obtained freehold titles—that is, rights over the surface and under-surface values, with the exception of gold and silver, which minerals always were vested in the Crown.

## CLOSED THE LANDS TO SETTLEMENT

In 1871 British Columbia went into the Canadian Confederation and provision was made in the Terms of Union that a tract of land extending 20 miles on each side of a proposed railway running from Esquimalt (near Victoria) to Nanaimo should be reserved as a part of the subsidy to those undertaking the construction of the road. Accordingly the British Columbia government declared a reserve on these lands, which it is contended closed them absolutely to settlement. In 1884 British Columbia conveyed these reserved lands, the same as are shown in the illustration, to the Dominion together with "all coal, coal oil, ores, stones, clay, marble, slate, mines, minerals and substances whatsoever thereupon, therein and thereunder." In turn the Dominion Government assigned the lands, with its under-surface rights, to what is known as the Esquimalt & Nanaimo Railway Co., which concern, whose principals included the late Robert Dunsmuir and some capitalists of the United States, undertook to build the railway and did carry out its contract.

Subsequently, those who took up land in the belt when the reserve was supposed to be operative—that is, between 1873 and 1884—declared that the reserve was not valid because it was imposed in accordance with the Terms of Union, which provided that British Columbia should not alienate or sell any further portions of these public lands *in any other way than under right of preëmption, requiring actual residence of the preëmtor on the land claimed by him*. They advanced other seemingly sound arguments, and in 1904 the British Columbia legislative assembly passed the Settlers' Rights Act, which gave them a year in which to make their claims to the coal under their properties. Those whose rights were considered satisfactory were given provincial titles covering under-surface minerals, and the government agreed to support them should the company contest their legal rights.

The company fought, asking for disallowance at the



national capital and prosecuting a test case through the various courts of the land to the Privy Council, without success. Then an agreement was reached between the government and the company, the latter being recompensed to the extent of 20,000 acres of public lands, if it would leave the settlers in peaceful possession.

It was thought that this disposed of the matter, but not so. It developed that many settlers with as good

claims as those who got titles had failed within the year to lay them before the proper authorities. They began clamoring for recognition, which the present government, in 1917, decided should be granted. And so came the Settlers' Rights Amendment Act of 1917, which has been disallowed. It simply extended to Sept. 1, 1917, the period in which registration of claims could be made. In that period 179 applications were made, covering, according to a statement issued by the company, 33,000 acres, about 90 per cent. of which refer to coal lands, and the greater part of which, it is believed, contain coal seams of commercial value.

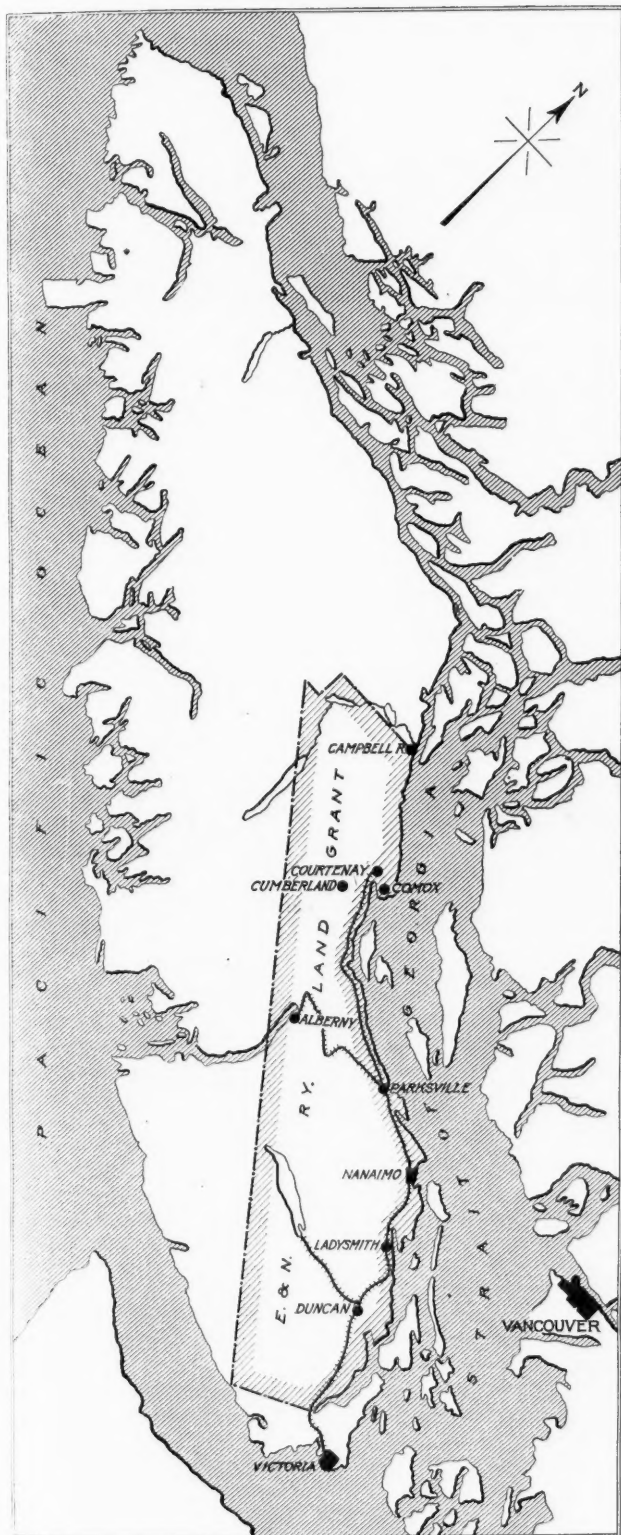
Some of these claims were investigated by the provincial government and several were allowed, provincial title being issued. Two such titles have been purchased from the settlers by the Granby Consolidated Mining and Smelting Co., and on the land covered by them, situated a little south of Nanaimo, this company has erected its new coal-mining town, constructing houses for workmen, tipples and plant, driven three slopes and struck a splendid bed of coal, in one instance 14 ft. in thickness at the face. This firm, also on the strength of the newly developed coal area and with a view to doing its own coking at its smelting center at Anyox, B. C., is engaged in the installation of byproduct ovens. In short the whole investment represents an outlay of \$1,000,000, to put it conservatively. Its embarrassment as a result of the Dominion government's unexpected action thus becomes clear.

In 1910, after the Esquimalt & Nanaimo Railway Co. had reached its understanding with the then existing provincial administration, it disposed of part of its lands, its coal mines, and further "all coal and fireclay in, upon, and under the said lands and control of the right to acquire all the coal and fireclay under the remaining lands in the Esquimalt & Nanaimo land belt." The purchaser was the Canadian Collieries (Dunsmuir), Ltd.

Having the property this company pledged it as security in the issuance of a bond issue of £2,054,800 (nearly \$10,000,000) and in the sale of preference shares to the value of \$5,000,000. One of its strong arguments, therefore, in asking that the Dominion government disallow the Settlers' Rights Act of 1917 was that it sanctioned the alienation of property to which it held title and which had been mortgaged to the investors of Great Britain and the United States to secure operating capital. This assertion, however, that confidence in British Columbia security among financiers would be shaken, was only incidental to the main contention that the settlers had no vestige of right in the property for which they were setting up a claim and that acquiescence in their demands would practically amount to confiscation.

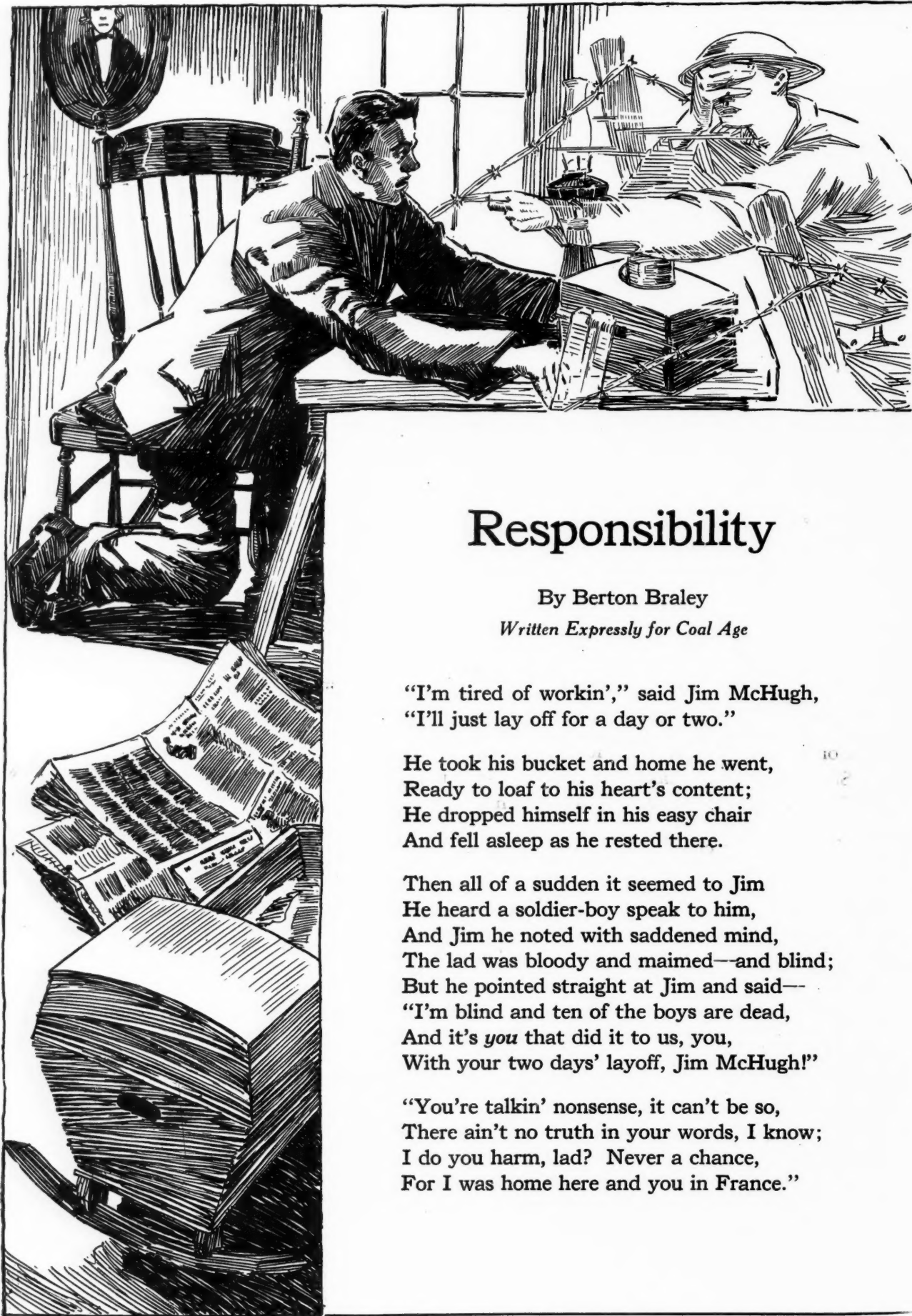
What the government of British Columbia will do is as yet undecided, but it is considered likely that, apart altogether from the actual merit of the settlers' case, it will maintain to its utmost, on principle, the provincial jurisdiction over all matters relating to property and civil rights.

IN MANY CASES where coal has been lost in robbing it has been found profitable to open gangways for re-robbing. This would not be necessary if a systematic robbing of the pillars had been carried out.



MAP OF VANCOUVER ISLAND, SHOWING ESQUIMALT & NANAIMO RAILWAY BELT





## Responsibility

By Berton Braley

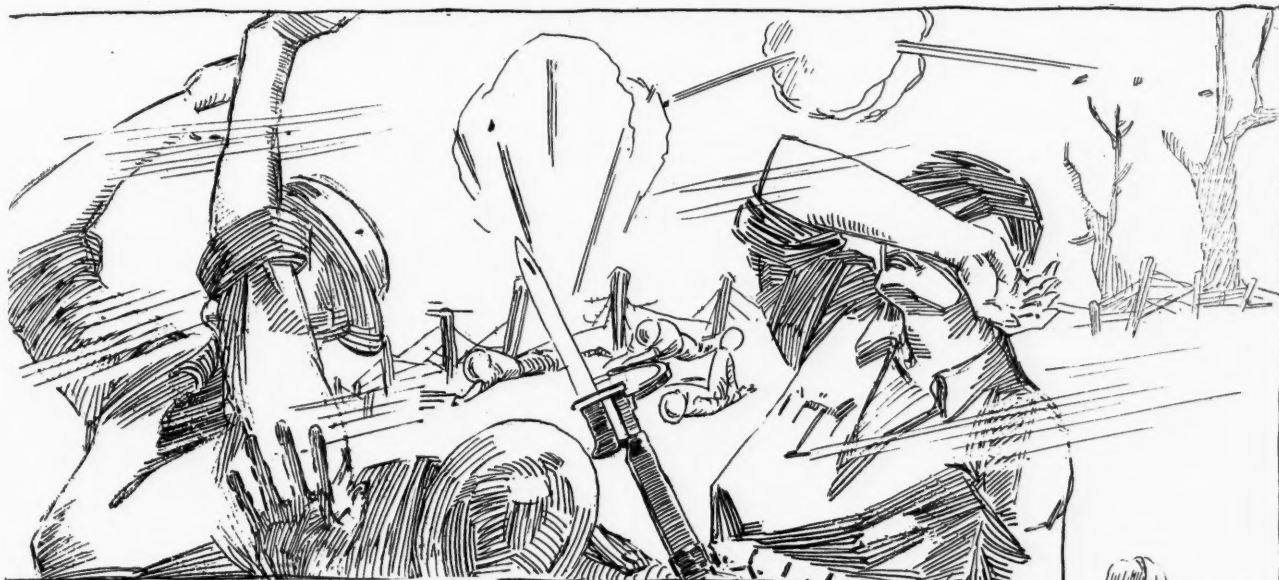
*Written Expressly for Coal Age*

"I'm tired of workin'," said Jim McHugh,  
"I'll just lay off for a day or two."

He took his bucket and home he went,  
Ready to loaf to his heart's content;  
He dropped himself in his easy chair  
And fell asleep as he rested there.

Then all of a sudden it seemed to Jim  
He heard a soldier-boy speak to him,  
And Jim he noted with saddened mind,  
The lad was bloody and maimed—and blind;  
But he pointed straight at Jim and said—  
"I'm blind and ten of the boys are dead,  
And it's *you* that did it to us, you,  
With your two days' layoff, Jim McHugh!"

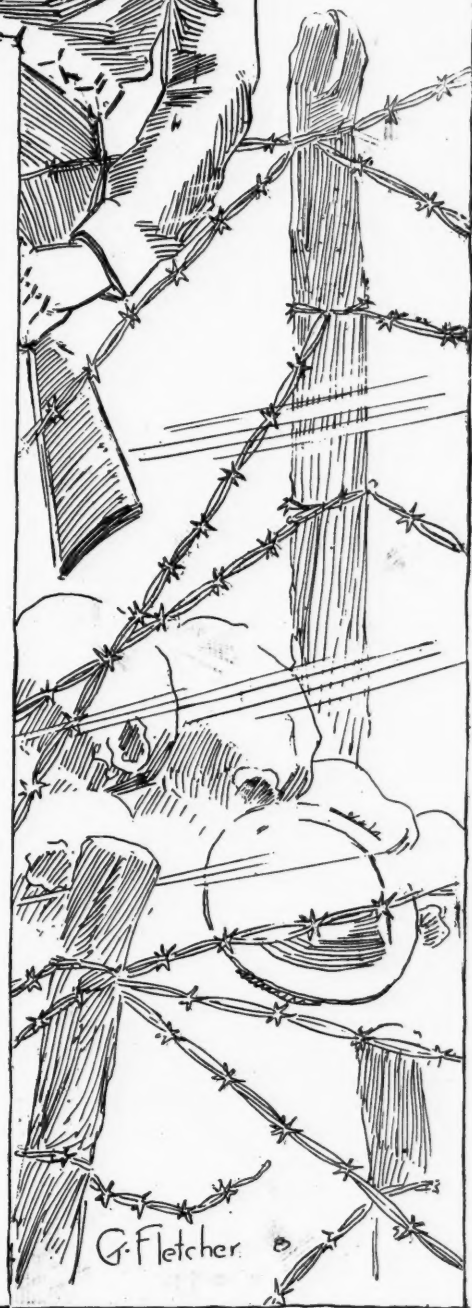
"You're talkin' nonsense, it can't be so,  
There ain't no truth in your words, I know;  
I do you harm, lad? Never a chance,  
For I was home here and you in France."



The soldier answered, "It is the truth,  
Ten men are dead in their strength and youth,  
And blind and helpless I go my ways  
Because you loafed for a couple of days;  
Just bear this thought in your mind and soul,  
That two days' break in the stream of coal  
Which you'd been mining meant this—that we  
Soldiers, fighting across the sea,  
Were some day certainly bound to lack  
For shells and bullets to meet attack,  
Since the coal to make them was never mined  
Because your work was two days behind.

"So, when we charged at a German trench  
We hadn't field guns enough to drench  
Their lines with steel, and though we made  
A victory of it, the price we paid  
Was the lives of ten good men and true  
And the light of my eyes—that's what, McHugh!  
Your fault it was, and I've showed you how,  
So what do you say about loafing now?  
Ten men are dead in the Flanders mud  
And your hands drip with their loyal blood!"

McHugh awoke, with a sort of scream,  
And realized it was all a dream,  
But he must have followed that soldier's hints,  
For he hasn't taken a lay-off since!



# Can Output Be Increased Scientifically?

By W. E. JOYCE

Sandy Run, Penn.

**SYNOPSIS**—*Various causes are ascribed by various people for the short coal production. Some writers say the great cause is the draft, others allege drunkenness among mine workers. Whatever may be the underlying cause the effect must so far as possible be rectified. It would appear that here a little modern science might be used to good effect.*

**S**PEEDING up production of anthracite coal with a dwindling force of operatives has resolved itself into a serious problem. To say that the failure to materially increase the output is due to the draft is as untrue as to say it is due to drunkenness among the miners.

That the draft is regarded by many mine managers as the greatest menace to future shipments is shown by the vigorous appeals being made to the exemption boards in all districts of the mining field.

That drunkenness is believed by many others to be responsible for the shortage of coal is shown by the numerous letters appearing in many public journals and magazines.

There is no doubt of the matter being serious, and to secure a satisfactory solution for all concerned it demands consideration that will be free from bias of every kind.

## EVEN OUTSIDERS ARE INTERESTED

People outside the coal-producing area are quite as much concerned as those depending upon it for a livelihood. The people of the mining communities who have sent their sons to the front are already violently objecting to having placed in the hands of coal-mining officials the right to say who shall or who shall not be excused from military duty. This is virtually what is being asked of exemption boards at the present time on the ground that certain employees are absolutely necessary to the production of coal at different mines. In objecting to granting such privilege, it has been pointed out that already where exemption or deferred classification has been granted on appeals of certain mining officials, their representations as to the real value of the man to production of coal were greatly overdrawn. In fact it has been shown that in a certain case an individual upon whom it was claimed the production of a mine largely rested was not employed at the mine at all, but was engaged doing chores about the bosses' homes and worked as a gardener for the widow of a former superintendent.

Another case is cited as showing the cupidity of officials. A man who was seeking an increase in wages was put off from time to time. When he last called and asked about his promised increase the official said to him: "We have done better for you than granting you a raise; we have had you placed in the deferred class by the exemption board."

There was widely published in coal-region papers dur-

ing the recent past an extract from an article originally appearing in a New York publication which purported to show that drunkenness among coal miners was rampant; that drinking bouts and protracted orgies were the vogue in all mining towns. Of course, the real cause for coal shortage was thus traced.

It is evident that the situation calls for more intelligent treatment. Chairman Hurley of the Shipping Board in his address before the coal operators meeting in Philadelphia recently, pointed the way in a definite manner when he likened the mining situation to conditions in the shipbuilding industry when the Government took hold. He said inefficiency among department heads was responsible for 50 per cent. of the trouble, and it was necessary to reorganize from the top down.

It is not recorded in reports of the meeting that his remarks were applauded. They were probably too personal but highly pertinent. It is singular, too, that no reference to Mr. Hurley's solution appears in the discussions that have since occupied much space in trade journals and other publications.

The people of the mining districts not directly connected with the mining industry are, perhaps, in position to best weigh the question. There are difficulties developing, even now, that threaten to complicate the problem of production by bringing discord among the miners themselves. Among these is the refusal in many instances of laborers to work on the day-wage plan with a contract miner.

That miners are not delivering coal on a 100 per cent. basis is unquestioned. But how to improve this without dislocating the means by which present output is secured requires the application of a sympathetic interest not readily found outside the mining field itself. Certainly it will not come from the radical exponent of the draft nor of the drunkenness tales, so that in consideration of finding a means for reaching the best solution, the board selected should not be without representation from the mining section itself.

## CHARGE OF DRUNKENNESS IS RESENTED

People of the mining communities resent the charges of drunkenness as a gross libel. Failure of men to report for duty on account of liquor forms but a small percentage of the existing absenteeism. At one colliery recently when 19 men were reported absent on the day following United Mine Worker President Hayes' appearance on a speech-making tour, urging men to renounce pleasure during the war period, it was found that 11 of the 19 men absent were teetotalers. Funerals, picnics and personal affairs formed the burden of excuses assigned.

And this will sum up the situation in a general way as far as drink is concerned. It is safe to say that drinking among railroad men is more extensive than among coal miners, and when one considers the cosmopolitan class of workers following mining it is quite astonishing to find such a low percentage of drinkers among them. During the heavy demands for coal last winter when piteous appeals were sent out for coal



supplies and urgent calls made by war projects, it was a weekly occurrence to find on Monday mornings several extra train crews crowding the trains bearing coal diggers to their places of employment. The extra crews were being sent to yard centers to take the places of railroaders who failed to report for work or requested leave of absence on various pleas.

These things happen within the mining district. Is it any wonder the people resent the calumnies constantly being circulated about their home sections? The iron and mill districts of the country are far more prolific in furnishing "horrible examples" for the temperance advocates than the coal mining communities, yet these districts are not being everlastingly traduced and villified as are the mining communities. This, however, is not said in defense of liquor drinking in any form. It is set forth rather as a deterrent upon the disposition among many magazine contributors to magnify conditions. We should have cold, hard facts upon which to build a decision when considering the question of military draft, drink and coal production.

In an open letter recently sent out by the manager of a large coal company, the statement was made that the operating force had been reduced 40 per cent. during a given period. An analysis of this falling off disclosed the fact that of the total number of men who had left the company's employ 20 per cent. had been drafted or volunteered for military duty while 80 per cent. had left to work under conditions more desirable elsewhere. It is significant that the treasurer of this same company appearing before a Federal Commission a short time ago declared under oath his company had made a profit of 50 per cent. in mining the previous year.

#### WAGES ARE NOT ALL

Considering the hours of work about coal mines, the question of wages is not alone the cause of men seeking employment elsewhere. For the son of a coal miner to try and better his condition in life by going into some other industry, surely is not wrong. He has ambitions and these ambitions are invariably fostered by his parents. If conditions at the old home are not congenial can he be blamed for going where he finds them more desirable?

The company making a 50 per cent. profit is certainly in a position to go into the social life of its employee and to apply up-to-date methods in an effort to learn how to get results.

Whether this is being done or not it is not the purpose of this article to indicate, but the fact remains that men are leaving the mining districts to find work elsewhere.

In this connection it should not be forgotten that the falling off in mine employees began long before war was declared by Uncle Sam. As early as 1914 one of the larger coal companies advertised for 1000 coal miners for a single district.

It is not impossible that a solution may be arrived at on a scientific basis. The purchasing power of a dollar under all conditions has already been reduced to formula. The relation of labor to the rise and fall in prices of commodities and living conditions is also being tabulated, and as wages and capital are both involved, does it not seem possible that scientific light might illumine the pressing question of how to secure the much needed maximum coal production?

## Legal Department

**ALABAMA PROP LAW**—An Alabama miner who failed to designate the places where he desired selected props or timbers delivered by his employer is not entitled to recover damages for injuries on the ground that an accident to him directly resulted from the employer's failure to furnish props or timbers. (Alabama Supreme Court, Clark vs. Choctaw Mining Co., 78 Southern Reporter, 372.)

**LIABILITY CONCERNING VEHICLES CARRYING PASSENGERS**—One permitted by the general manager of a coal-mining company to ride gratuitously upon a hand car used in carrying express matter to the company's mine was legally a passenger as to whom the company owed the duty of using reasonable care for his safety, consistent with the mode of conveyance. Hence, such passenger is entitled to recover damages for injury resulting from a collision between the hand car and a train, due to negligence of the operator of the car. (West Virginia Supreme Court of Appeals, Hodge vs. Sycamore Coal Co., 95 Southeastern Reporter, 808.)

**CO-EMPLOYEES OF A MINING COMPANY WHO WERE NOT "FELLOW SERVANTS"**—Plaintiff, while employed by defendant mining company in assisting in shoving cars loaded with slate and other refuse from the mouth of a mine to a dump, was injured through negligence of another crew pushing another car over the same track. Held, that the members of the two crews were not "fellow servants" within the established rule in Kentucky that an employer is not liable for injury to an employee when caused by negligence of a fellow servant, with certain exceptions, as where it appears that the negligent employee had previously manifested such incompetence or carelessness as to charge the employer with negligence in retaining him in the service. (Kentucky Court of Appeals, Paradise vs. Elk Horn Mining Co., 203 Southwestern Reporter, 291.)

**NEGLIGENCE OF MINE SUPERINTENDENT—PENNSYLVANIA MINE FOREMAN LAW CONSTRUED**—In affirming judgment for \$9000 in favor of plaintiff for injury sustained through a fall of rock from the roof of a gangway into which he had stepped in defendant's mine, in which he was employed, to avoid an approaching car, it is held by the Pennsylvania Supreme Court that the recovery was sustained by a jury's finding of negligence on the part of the mine superintendent in failing to obviate the dangerous condition which had previously been drawn to his attention. It is also held that the Pennsylvania statute, providing for the appointment of mine foremen to have charge of anthracite coal mines, contemplates the placing of a foreman in charge of each separate mine; there is no compliance with the statute in placing in the charge of a single foreman several distinct mines, together constituting one colliery. (Kolalsky vs. Delaware & Hudson Co., 103 Atlantic Reporter, 721.)

**VALIDITY OF SOLE SELLING AGENCY CONTRACT—CORPORATE MANAGEMENT**—Where a coal-selling corporation acts as the sole agent in selling all the coal produced by several mining companies, a contract of agency between it and one of such companies is not invalid as being in restraint of trade, if the selling corporation is not owned or controlled by the producing companies and sells the output of each mining company as its own product, and at such price as it will command in the market. A shareholder in a private corporation is not precluded from voting on a matter before a stockholders' meeting merely because he has a personal interest in that matter at variance with the company's interest. If a mining corporation has not issued its full authorized capital, it is discretionary with the directors to sell part or all of the unissued stock, subject to the right of each stockholder to buy his pro rata share of such stock. (West Virginia Supreme Court of Appeals, Thurmond vs. Paragon Colliery Co., 95 Southeastern Reporter, 816.)

# Water Indicator and Motor Stop

BY FRANK HUSKINSON  
Lafayette, Colo.

**SYNOPSIS**—On the mine water-supply system considerable trouble was experienced because the supply pump, which could not be watched all the time, would sometimes either pump the well dry or overflow the tank, or both. This difficulty was obviated by means of electric stops that operated just before the danger points were reached.

**T**HE water supply for domestic and power uses for a certain mine was stored in a large water tank upon the hillside, so that it would flow by gravity to the village hydrants, the boilers and other connections. This tank was fed from a well located in the valley of a creek, about half a mile away. A triplex pump driven by a 15-hp., three-phase induction motor was employed to pump water into the tank.

As most of the pumping was done at night by the watchman, there was no way for him to tell how much water was in the tank. Also at times the pump was forgotten and all the water pumped out of the well, allowing the pump to run on air. This is one of the

the gage on the tank when it was full. The cutout switch must stop the motor just before all the water was pumped out of the well, and it must also stop the motor just before the water in the tank would run over. While I was at it I decided to put in a set of visual signals on the water tank, so that anyone could tell at any time the amount of water in the tank.

In order to readily understand the principle and action of the automatic cutout arrangement on the motor operated by the cutout switches placed in the circuit, refer to Fig. 1. This shows the standard connections of a W-H auto starter, a type that can be used on several different kinds and styles of induction motors with good results; also it is a common type to be found around coal-mine installations.

The operation of the auto-starter is simple, and familiar. The lever is first pulled over as far as it will go on the starting side. As soon as the motor reaches full speed the handle is quickly moved from the starting to the running side (or position) where it is locked in place by the catch on the no-voltage-release coil. The action of this coil is to hold the auto-starter lever in the running position as long as current is flowing through the coil. Whenever this current is interrupted the coil loses its magnetism and releases the catch that holds the lever over on the running side. The lever instantly returns to the off, or neutral, position. It must be operated by hand in order to get motor started again.

In my arrangement to automatically shut off the motor whenever the water in the well was pumped down to a certain level, I arranged a special switch in series with this no-voltage-release coil. This switch had a strong cord fastened to the hinged portion, or blade, and on the other end of this cord was a large-sized float. This float was placed in the well and the length of cord was made such that just before the height of the water would allow the suction pipe to take air, the weight of the float would pull on the cord and cause the cutout switch to open the circuit in the no-voltage-release coil. This allowed the auto-starter lever to return to the off, or neutral, position, thus stopping the pump motor. As soon as the water rose in the well the cutout switch would automatically close. The circuit would thus be closed in the no-voltage-release coil, and the motor be in readiness to start again. Fig. 3 shows details of the float, cutout switch and connections.

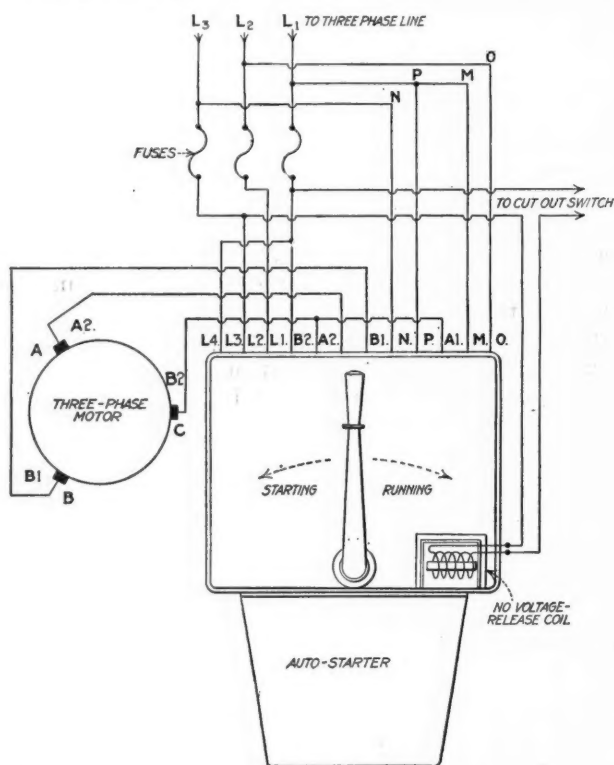


FIG. 1. ELECTRIC CONNECTIONS TO THE AUTO-STARTER

worst things that can happen to a pump, as it soon cuts the packing and allows the valves to become loose and leaky, causing considerable trouble as well as expense.

After a few cases of trouble of this character, and after the tank had been run over a few times, I decided that I would overcome this trouble by placing an automatic cutout on the motor, to be operated by the lowering of the water in the well and by the action of

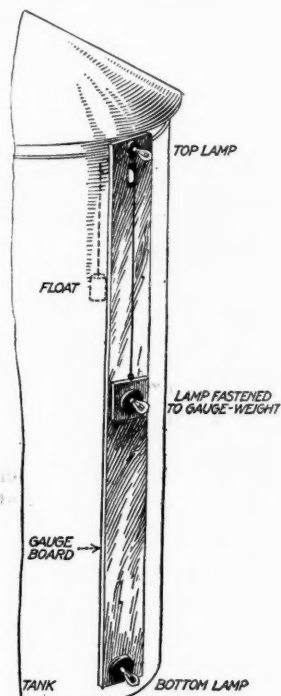
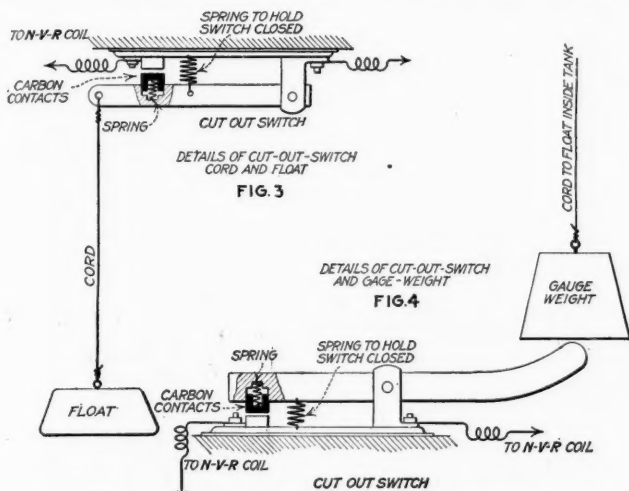


FIG. 2. ILLUMINATED TANG GAGE



In the arrangement to automatically shut off the pump motor, whenever the tank became full, a special cutout switch was placed on the gageboard of the tank and connected in series with the cutout switch and the no-voltage-release coil. The special cutout switch was placed at the bottom of the gage-board and arranged so that the gage-weight would come in contact with the handle of the cutout switch and cause it to open the contacts just before the tank was full of water, thereby opening the circuit in the no-voltage-release coil and allowing the auto-starter handle to automatically re-



FIGS. 3 AND 4. SUMP AND TANK CUTOUTS

turn to the off, or neutral, position and stopping the pump motor.

As soon as the water fell in the tank the gage-weight would leave the switch handle and the cutout switch would automatically return and make contacts again, thereby closing the circuit in the no-voltage-release coil. The pump motor would then be ready to operate again. Fig. 4 shows details of the tank, gage, cutout switch and connections.

This same arrangement can be applied to any protective device or apparatus that employs in its circuit a no-voltage-release coil (such as a switch or circuit breaker), the results being the same.

The visual signal to determine the amount of water in the tank from a distance was arranged by the use of three electric lights (see Fig. 2). One lamp was placed at the top of the gage-board, another at the bottom, while the third was fastened to the gage-weight with enough flexible cord to allow it to travel up and down the gage-board. With the three lights arranged in this manner it was an easy matter to gage the distance between the center or gage lamp and the other two, which distance indicated the amount of water in the tank.

With the motor protected by the automatic cutouts, the chances for trouble due to the pump running on air are eliminated. The visual signal is of great help to the pumper and the mine officials, as they can determine at any time the amount of water in the tank. With the tank protected from any liability of running over, quite an economy is effected in the saving of water and the unnecessary wastage of power due to the running of the pump motor.

With both tank and motor protection, the pumper can

start the pump and leave it safely, with no fear of its running on air or the tank running over. It will be automatically shut off when all the water is pumped out of the well or when the tank is full.

A protective device of some kind should be put on all pump installations that are liable to exhaust their source of supply and run on air. The arrangements just described will work satisfactorily on almost any kind of an electric pump motor installation that utilizes an induction motor and an auto starter, or on any protective device that has a no-voltage-release coil embodied in its circuit.

## Minecdotes

### Mules Versus the Juice

The mine electrician and the pit boss were exchanging reminiscences of the past. The pit boss had just finished telling about his experience with a mule. "Mules," said the electrician, "always remind me of my first attempt to become a second Edison.

"It was this way: I had attained the advanced age of 13 and held the honorable position of trapper. Of course, at that time the height of my ambition was to become a mule skinner. This idea was fostered by the drivers, who were wont to help themselves liberally to my lunch and oil.

"One day we had a surprise. The company was going to put electricity in the mine. The use of electricity was not well known at that time around coal mines. I saw great prospects in the future and made a trip to town and bought a lot of electrical toys and books, with the result that in a short time I was much interested in the 'juice,' as the old timers called it.

"After many delays the big day came for using the 'juice' at the mine. The end of the trolley line was about 400 or 500 ft. from my door, and there were five lamps connected to the trolley line and rails. This made more light on the parting, it seemed to me, than if the sun had been shining there. Furthermore the electric locomotive was a seven-day wonder to most of us.

"A friend suggested that I could keep everyone away from my lunch and oil if I attached a wire to the trolley and onto my oil can and lunch pail, but that I would have to stand on a piece of dry wood myself whenever I touched them. I thought this would be fine, so I gathered up a lot of old bailing wire and proceeded to put in a line from my door up to the trolley line, working on it secretly and keeping it concealed so that no one knew what I was doing. I remember I had it under the rails and buried all over the parting. In some places it was fastened to the timbers.

"At last it was all in place, and I had my oil can and lunch pail sitting upon it at the door. I took a stick and laid the other end of the wire on the trolley line. I saw it make a big flash, but it stuck fast to the wire, so I went back to my door and awaited results.

"Well, results came quicker and in a much different way than I had expected. The first driver out had not much more than come through the door going onto the parting with his load when his mule seemed to



wake up all at once and started kicking and running. Every time that mule hit the rail there were sparks a-flying. The driver jumped off the car, stepped on the rail, and say, I sure thought he was crazy. He hollered, 'Oh, I am killed! I am killed!' He swore that the mule had kicked him all to pieces, and I am positive that the animal was at least 20 ft. from him and rapidly going further.

"Well, it was about the same with all of the mules. As soon as they would get through my door they would suddenly come to life and start to kicking and running. It made no difference what the driver said. They sure were a lively bunch, sparks flying from their shoes every time they hit the rail; and the drivers themselves seemed to have the same symptoms as the mules, only in some cases they were worse. I was enjoying myself hugely and wondering what caused all the excitement.

"Finally, the electrician was sent for. He was much puzzled for a while until he came to my door. There he stopped and filled his lamp with my oil. I was surprised to see him pick up the oil can, as I had it setting on a wire; but he had on a pair of gloves. Next he removed his gloves and reached over for my lunch pail. I don't really know whether he got hold of it or not. He acted worse than any of the mules, and the next thing I knew my enjoyment was cut short. The electrician had me by the ear and was telling me about a whole lot of things that were coming to me if I didn't show him where I had that wire fastened to the trolley line. I sure did show him. He cut it off and made me take up all of my line and said a lot of things to me about the 'juice,' etc.

"After a while the mules became quieted down and the mine resumed normal operations. It was some time before the drivers and myself were on good terms again. That was my first attempt to become a second Edison, and I never see a mule or hear mule mentioned without vividly remembering it."

### How Our Coal Output Is Consumed

The following table has been calculated from that given in Fuel Administration Order No. 553 and published in *Coal Age*, on June 15, 1918, Vol. XIII, page 1116:

ESTIMATE OF BITUMINOUS COAL USED IN 1917 AND TO BE USED IN THE COAL YEAR 1918-19

	In 1917	Per Cent.	In 1918-19	Per Cent.
Industrial.....	204,907,000	36.58	242,024,000	38.68
Domestic.....	66,915,000	11.95	75,678,000	12.10
Gas and electric utilities.....	33,038,000	5.90	37,941,000	6.06
Railroads.....	155,000,000	27.67	166,000,000	26.53
Exports.....	24,000,000	4.29	24,000,000	3.84
Beehive coke.....	52,450,000	9.37	52,450,000	8.38
Bunker—foreign.....	7,700,000	1.38	10,000,000	1.60
Bunker—domestic*.....	5,000,000	0.89	5,000,000	0.80
Used at coal mines for steam and heat.....	11,000,000	1.97	12,500,000	2.00
Total.....	560,010,000	100.00	625,594,000	100.00
Used from storage.....	4,375,000	0.079		
Imports.....	907,000	0.17		
Estimated production.....	554,728,000	99.04		
Substitution of coal for oil mainly in west.....			2,000,000	0.32
To increase stockpiles.....			7,000,000	1.12
Total requirements for 1918.....			634,594,000	101.44
Production 1917.....	554,728,000	99.04		
Production 1918-19 required for needs.....	634,594,000	113.3a		
Increase required.....	79,866,000			

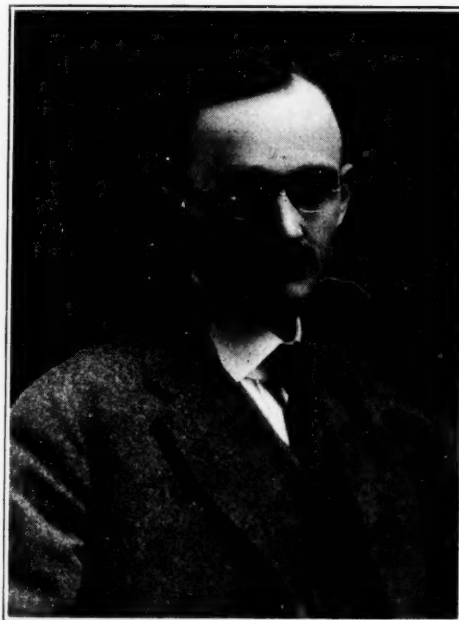
\* Including Great Lakes. † For industrial plants and public utilities outside of New England, a ten days' supply. ‡ No allowance for estimated conservation. a Production needed 1918-19 compared with use in 1917, not compared with production 1917.

### Who's Who In Coal Mining

#### John Adrian Garcia

The late Marshall Field one time tabulated three things which one was to remember if he desired to achieve great things. These were the value of time, the success of perseverance, and the joy of originating. John A. Garcia, vice president and treasurer of the Allen & Garcia Co., engineers, of Chicago, Ill., evidently steadily kept before him this trio of principles as a guide, for hardly anything he has done since he received the degree of mining engineer from the Missouri School of Mines and Metallurgy in 1900 but could be traced to the conscious or unconscious application of the rules enumerated above.

Born in St. Louis, Mo., Aug. 26, 1876, Mr. Garcia early evidenced that he was willing to pay the price of



JOHN A. GARCIA

success in honest effort. No task at which he was put was looked upon as painful drudgery, to be reluctantly endured, but as an opportunity to be seized with joy.

After graduating from the School of Mines, Mr. Garcia spent several years in Arizona, Colorado, Arkansas, Missouri and the Middle West states in copper, lead and zinc mining, on railroad construction work, and as a chemist, etc. In 1903 he entered coal-mining work as mining engineer in the mining department of the Missouri Pacific R. R. He then became successively chief engineer of the Rock Island Coal Mining Co., Indian Territory; Consolidated Coal Co., St. Louis; Dering Coal Co., Burnwell Coal Co. and Consolidated Indiana Coal Co., Chicago.

Having made a study of his business, and knowing his profession in every detail, Mr. Garcia in 1911 formed with Andrew Allen, of Chicago, the Allen & Garcia Co. to handle the design, construction, development and operation of coal mines. The record this company has

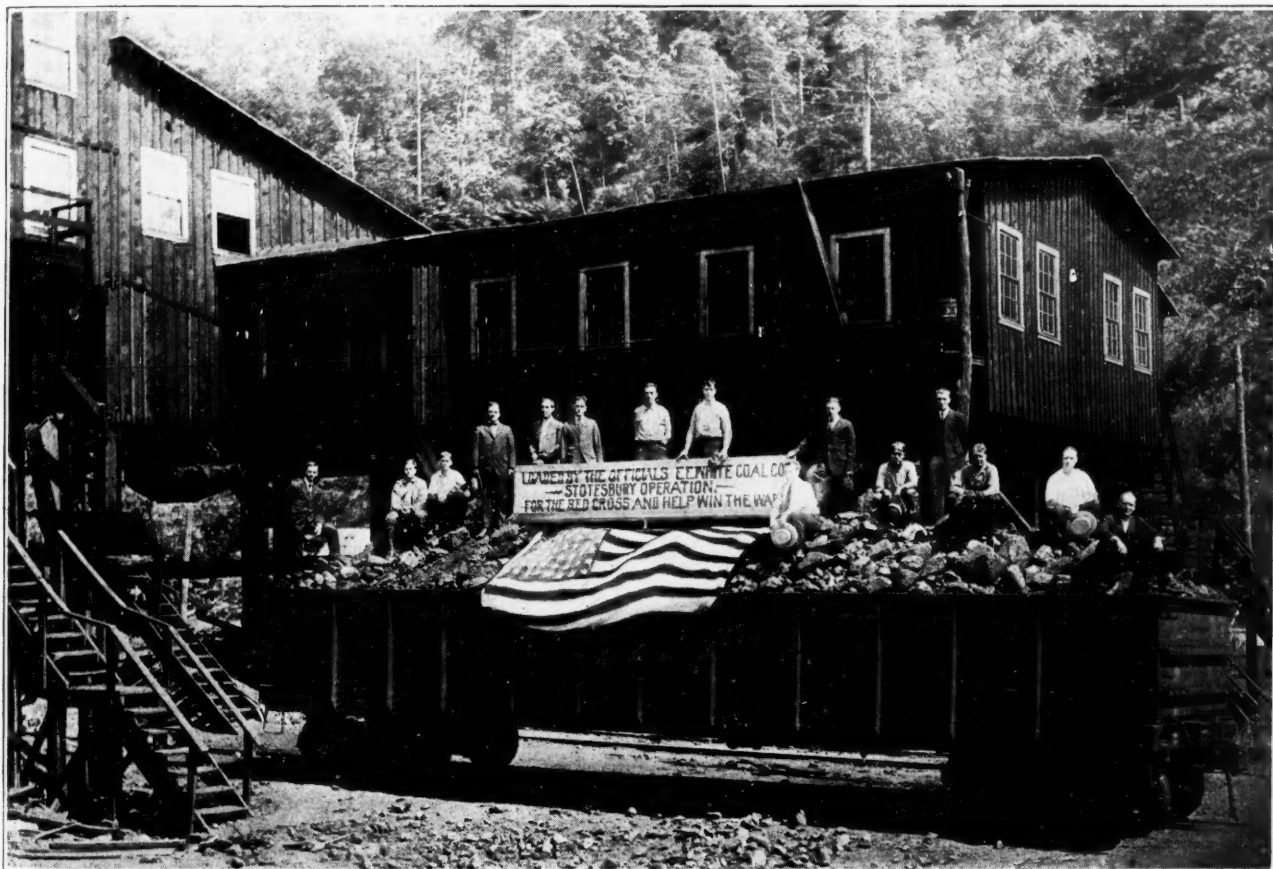
throughout the United States speaks volumes for the success of the partnership, which has taken its place with the leaders in the development of the industry.

Mr. Garcia's specialty is to examine and report on coal mines and to direct the operation of properties. To assist in solving the problem of big tonnage, Allen & Garcia designed a cage to meet the most exacting conditions. This item of coal mining development is cited as it exemplifies the part Mr. Garcia is taking in making coal history. Quoting his words: "If we can help in any way to better the conditions of the industry, make min-

ing safer, or improve our methods, it is not only our duty to do so, but our pleasure as well."

In spite of his devotion to his many duties, Mr. Garcia has still found time to contribute various articles on coal mining and kindred subjects to the trade and technical journals and mining societies. He takes a good grip on the joys of life and plays the game like a man. He is a member of the University Club of Chicago, the Engineers' Club of Chicago, and the Western Society of Engineers. He is married, and the father of two children—a boy of 14 and a girl of nine.

## Novel Scheme for Boosting Production



OFFICIALS GAVE UP THEIR SUNDAY TO LOAD COAL AND SET AN EXAMPLE FOR GREATER PRODUCTION; PROCEEDS WENT TO THE RED CROSS

J. T. Morris, superintendent of the Stokesbury operation of the E. E. White Coal Co., operating at Glen White and Stokesbury, W. Va., employed a novel scheme of getting more coal out by using all of the officials at the plant on Aug. 4. It is true, of course, that Sunday should be observed, but, as he puts it, "Our boys in the trenches work on Sunday, so it won't hurt us." The autos were left in the garage that day and each man went after the coal with the true spirit of the citizen who wants to do his part.

The scheme was put up to C. R. Stahl, assistant to the general manager, and he was asked what he thought about it. His answer was characteristic of the man who can see things at a glance for their true worth. "Fine," he said; "I'll load five tons with you."

So there you have the scheme. Each official was to load five tons of coal in addition to his regular work, and on Sunday at that. Through the generosity of E. E. White,

president and general manager, and the efforts of his loyal men, the proceeds go for the benefit of the American Red Cross and to help win the war, as the banner on the loaded car of coal in the illustration shows.

Those men who loaded five tons each were L. C. R. Stahl, assistant to the general manager; J. T. Morris, superintendent; E. T. Lilly, mine foreman; Tom Wattis, Bill Wattis, Edward Hylton, R. L. Spease, William Dover, assistant mine foremen; Charles Crews, chief electrician; J. K. Hodges, store manager; S. L. Deck, outside foreman; G. E. Rowe, warehouse clerk; James Hewitt, mining engineer; and Moscoe Duncan, timber foreman. Frank Thompson, motorman, and Claude Vaughan, brakeman, volunteered to haul the coal.

If every official in similar positions would each load five tons, the State of Virginia would have 300,000 tons to its credit from this source alone.



## Reinforced-Concrete Pit Props

BY M. MEREDITH  
Liverpool, England

In consequence of the extreme shortage of pit timber, a considerable degree of interest attaches to a series of tests of reinforced-concrete props and beams which has been made in one of the engineering departments of the Manchester University. These concrete props and bars, which are made by the Lilleshall Co., Ltd., of Priors Lee Hall, Shropshire, England, are reinforced on the "Keedon" system, props up to 6 ft. long having three  $\frac{3}{4}$ -in. steel rods passing through corner hoops in triangular steel frames, fixed at intervals, and those 7 $\frac{1}{2}$  ft. long having rods similarly placed through hoops in square frames. For beams the frames are oblong, with the four rod hoops arranged on the outside instead of on the inner, as in the case of the props.

Three of the most interesting tests on the first day related to a 6-ft. concrete prop, made on the semi-dry system, reinforced with  $\frac{7}{8}$ -in. rods, but not containing Keedon hoops. This prop, which was six months old, was submitted to a pressure of 10 tons quickly, then increased at the rate of a ton a minute. At 30 tons the ends cracked, and at 34 $\frac{1}{2}$  tons the prop fractured at the ends. It was then shortened to 5 ft. and again tested, breaking at 41 $\frac{1}{2}$  tons. Again it was shortened, this time to 3 ft. 9 in., and fractured at 42 $\frac{1}{2}$  tons.

A concrete prop 4 ft. 6 in. long and 4 $\frac{3}{4}$  x 4 $\frac{1}{2}$  in., with  $\frac{3}{4}$ -in. rods, through Keedon hoops, made on the semi-dry system 12 weeks ago, crushed at the ends under a pressure of 26 tons, while a replica of this prop held 25 tons for 5 min. before breaking at one end. It was reset and broke at 12 tons, the ends of the rod curling round the concrete. The particular point of interest in these two series of tests was that the older the prop grew the firmer it became. In another test a 6-ft. concrete prop with rods and Keedon hoops caused a surprise by breaking at 19 tons. This was attributed by the makers to some fault in mixing and to the newness of the prop.

The timber customarily used in pits in pre-war days was Norwegian and Russian larch, and it seemed a pity not to have put some of this timber under test at the same time, so that comparative values might have been more precisely judged. Instead, a piece of pitch pine 4 ft. long and 6 in. in diameter was tested and broke at the ends at 37 $\frac{1}{2}$  tons. The test was interesting but was of little or no value, as wood of that quality is not used for propping. Moreover, the clean-sawn ends were placed against the steel faces of the testing machine, whereas the concrete props had wood cushions at each end of 1 $\frac{1}{2}$  in. thickness.

On the second day, however, some Welsh larch props—the timber that is being principally used just now—were introduced. A piece 5 ft. long and 5 in. in diameter was submitted to a pressure of 10 tons in 30 seconds, and then this stress was increased at the rate of four tons a minute. It broke at 25 tons, which gave 2800 lb. to the square inch. A piece 6 ft. long and 6 in. in diameter broke at 30 $\frac{1}{2}$  tons, or 2580 lb. to the square inch. One of the final tests was the trial of a 6 ft. 6 in. reinforced-concrete prop 7 in. in diameter as a bar, but when the load registered 22,800 lb. the bar was bending so much as to dangerously threaten to fail suddenly, and it was therefore withdrawn unbroken.

There were many other tests, but these seemed to be the most interesting. On the whole the views expressed by the experts present gave the impression that the demonstration was favorable to reinforced concrete. The fact that a prop could twice be cut down and reused, each time to greater advantage, furnished a reply to the objection made in some quarters that concrete props, unlike timber, could only be used once.

Then again, in no test did the concrete prop collapse by buckling or breaking in the center, as is usual with wood. Moreover, the prejudice entertained by miners to anything but timber, on the ground that props of the latter material "talk" to them—that is, that the creaking of timber just prior to a collapse affords them a warning to clear out of danger—should be removed by the fact that under the test pressure the concrete props also gave warning by a cracking sound and a crumbling at the ends.

Another thing that appears to favor concrete as against wood is that in deep mines, such as prevail in the Doncaster area, props of concrete may be safely left in a worked-out section, whereas timber must be removed as a precaution against fire. In this process as much as \$25 and sometimes even \$75 has been spent on the removal of a single piece of timber.

One point seems quite clear—namely, that concrete props and bars may be used to great advantage in main roadways, for while the initial cost is certainly greater than that of timber, in the pre-war era, the life is practically for all time, so that the ultimate cost shows a marked reduction.

To what extent general circumstances will permit of the use of concrete props at the coal face is another matter; but if they are advantageous for the roads any difficulties with regard to their use at the face should not be insuperable. Not only is timber scarce in these days, but steel scrap, such as rails and tube, suitable for cutting to pit sizes, is now almost unprocureable. Steel rails cut to lengths of from 6 ft. to 9 ft. have in the past been found extremely serviceable for propping near the face, interspersed with timber props. In such cases the longer pieces are bolted together, two thus making one support. The shorter lengths, however, are used singly. Eight-inch steel girders used as cross bars with timber props have stood in some of the main roadways for 15 years or more.

The difficulty now, however, lies in the inadequate supply of such material, and with plenty of concrete available reinforced-concrete props and bars look like a solution for an awkward problem. They are a "war" innovation, the first having been made in October, 1914. Arrangements are now being made to secure for them a permanent market. The makers, we understand, are now turning out about 3000 tons a week of the props, but how much greater the output will have to be, if the new system is favored by the mining authorities, may be judged from the fact that the normal consumption of pit timber in the collieries of Yorkshire, Derbyshire and Notts—which coalfields together yield 26 per cent. of the whole output of the United Kingdom—is 1000 tons a day. It may be of interest to add, however, that for every ton of timber used the three counties named produce an average of 170 tons of coal, compared with the low average of 33 tons of coal for every ton of timber used in the coalfields of South Wales.



# News From the Capitol

By Paul Wooton



## Men Responsible for Greater Output

Production managers, on whose shoulders will rest the immediate responsibility of turning the curve of production upward, have been appointed by James B. Neale, of the Fuel Administration. The production managers and the fields over which they will exercise authority are:

Charles O'Neill, central Pennsylvania; F. B. Reiman, western Pennsylvania, north of Pittsburgh; R. W. Gardiner, Pittsburgh and Panhandle District; James S. Amend, Westmoreland, Irwin Gas, Ligonier, Latrobe and Greensburg; W. L. Byers, Connellsville region; Howard P. Brydon, Cumberland, Piedmont and Upper Potomac, Maryland, and West Virginia; F. M. Lockhart, Somerset-Myersdale; J. J. Roby, eastern and central Ohio; William H. Wallace, Michigan; James H. Pritchard, southern Ohio; H. F. Price, Big Sandy and Elkhorn; A. L. Allais, Hazard; J. W. Dawson, high-volatile fields of southern West Virginia; E. E. White, New River and Winding Gulf; R. D. Patterson, Tug River and Pocahontas field; G. D. Kilgore, Clinch Valley and southwestern Virginia; Howell J. Davis, Harlan field in Kentucky, Tennessee and Georgia; Judge H. C. Selheimer, Alabama; W. G. Duncan, western Kentucky; W. J. Freeman, Indiana; F. C. Honnold, Illinois; Ira Clemens, Iowa, Missouri, Kansas, Arkansas, Oklahoma and Texas; A. K. Craig, Montana and northern Wyoming; Thomas Sneddon, Utah and southern Wyoming; J. F. Welborn, Colorado; George T. Brown, New Mexico; Brooks Fleming, Fairmont-Clarksburg, and D. C. Botting, State of Washington.

## Restrictions Lifted on Screenings

To meet the screenings situation, the Fuel Administration has lifted the restrictions on the use of that class of fuel by the manufacturers of clay products. This extensive industry will be permitted to buy screenings in unlimited quantities during the next 30 days. They will be permitted to store such screenings for use as they desire during the remainder of the year. This action was taken to relieve the accumulation of screenings in the Middle West.

## Spreading Gospel of Conservation

A new force looking to the saving of coal is the recently created conservation section of the Railroad Administration. The section is under the management of Eugene McAuliffe. Just at this time, Mr. McAuliffe is sending out 500,000 extracts from the proceedings of the International Railway Fuel Association convention. Those portions of the proceedings which would be helpful to engineers and firemen were sent to all such em-

ployees of the railroads in the country. Likewise, other abstracts were made and sent to those most likely to profit by them. The abstract of the proceedings of the convention has been printed tastily, with the more important features brought out in black-face type.

## Speakers to Boost Production

The production department of the Fuel Administration is increasing the number of its speakers to fifty. It is expected that one of the Administration's orators will be placed in each coal-mining district. In addition, a cooperative agreement has been effected which will permit of the use of the four-minute men on Labor Day and the Sunday preceding. Having noted the splendid effect of the "sings" among the soldiers, the production stimulators expect to encourage this practice among the mine workers.

## To Take Prompt Action on Applications for New Coal Mines

Applications for permission to open new coal mines are to receive prompt action. A committee consisting of Frank G. Jones, chairman, S. M. Taylor and R. L. Ireland has been designated to pass on these applications for the Fuel Administration. The policy of the committee is to keep in view at all times the maintenance of the largest possible flow of marketable coal. Numerous applications now are pending. The committee assures that action one way or the other will be taken promptly on all of these requests.

## Call Off Convention in Order to Work in Mines

An example of the practical results which are being obtained by James B. Neale, the director of production for the Fuel Administration, is the cancellation of the convention of the Russian Brotherhood Organization. A general assembly had been called for Sept. 16. Mr. Neale called the attention of the officials to the advisability of curtailing any gatherings which would necessitate the absence from work of a considerable number of miners. Jacob S. Koda, of Mt. Carmel, Penn., the supreme president of the organization, has advised Mr. Neale that he is in entire accord with the spirit of his request and that the convention has been indefinitely postponed.

### Summary of Coal Loaded Since January

A summary of coal loaded since the beginning of the year has been issued by the Railroad Administration as follows:

	Decrease, Cars	Increase, Cars
Month of January.....	79,172	31,250
February.....		46,613
March.....		73,408
April.....		84,998
May.....		88,840
June.....		113,188
First four weeks of July.....		
Increase—1918 over 1917—359,125 Cars		

The increased loading of coal, which is being effected, is shown by the returns for the week ending July 27, which follow:

	1918	1,917
Total cars bituminous.....	224,572	193,144
Total cars anthracite.....	40,942	43,050
Total cars lignite.....	3,657	2,813
Grand total cars all coal.....	269,173	239,007

### To Conserve High-Grade Coal

Every effort is being made to cut down the demand on the high-grade coal of West Virginia, Pennsylvania and Maryland. Small as are the exports of this coal to the west coast of South America, steps are being taken to supplant even that demand. The Fuel Administration has arranged for the trying out in Chile of coal produced in the State of Washington. It is believed that this coal will be found to be adequate to the industrial needs of Chile, thereby relieving the eastern fields of that tonnage.

### Coal Shipments Show Increase

An extract from the report of the regional director for the Alleghany region to the Director General of Railroads reads as follows: "In June anthracite coal loading was 63,187 cars, an increase of 4179 cars over last year; bituminous, 191,767, increase 22,781. July anthracite loading was 69,630 cars, an increase of 2329 cars; bituminous, 223,014 cars, increase, 35,100. Coal dumped at tidewater increased 223,537 tons in June, and 444,916 tons in July, as compared with corresponding months last year. Byproduct ovens are being operated at 94 per cent. of their capacity."

### Laundries Not to Be Curtailed

No curtailment of fuel for laundries is to be made by the United States Fuel Administration. After a conference with representatives of the industry, it was decided that the matter of fuel supply for that industry could be handled best locally.

### Detroit Assured of Adequate Coal Supply

Detroit has been assured an adequate supply of coal for domestic use. A delegation from Detroit visited Washington last week to emphasize the necessity of an early supply of coal sufficient to meet the needs of domestic consumers. The Fuel Administration declined to increase Detroit's allotment of anthracite, but will see to it that that city has a sufficient supply of domestic sizes of bituminous coal. The steam-coal situation in Detroit is described as excellent and it was not discussed at the conference.

### New Lake Coal Handling Charges

Adjustments of charges for handling and forwarding lake coal have been made by the Fuel Administration as follows:

a. A lake forwarder may charge 20c. per ton on cargo coal for his services.

b. A lake forwarder may charge 25c. per ton for fuel coal furnished a vessel, and 50c. additional, or a total of 75c. per ton, where the coal is delivered to the vessel by barge or scow.

c. A purchasing agent may be employed by the lake forwarder to buy either cargo or fuel coal and charge a commission of 15c. per ton, if not prohibited by Rule 3 of Publication 22 from so doing.

d. A lake forwarder may pay a purchasing agent 15c. per ton for buying either cargo or fuel coal for him and add same to the 20c. allowed for cargo coal and the 25c. or 75c. allowed for fuel coal.

e. A licensed distributor acting as a lake forwarder or lake fueller who purchases coal from an entirely independent mine, or from a mine not owned or controlled by another lake forwarder or lake fueller, may add the purchasing agent's commission of 15c. per ton to the 20c. per ton allowed on cargo coal, and to the 25c. or 75c. allowed on fuel coal, but such sum cannot be added if the lake forwarder has employed an independent purchasing agent in the purchase of such coal.

f. No commissions whatever can be added by lake forwarders or lake fuellers to the applicable Government price of anthracite coal.

### Brief Washington Notes

The Bethlehem Coal Co. reports that Charlie Mitchell, of Helens Run, near Fairmont, has mined 217 cars of coal in twelve days. At 82c. a car, his earnings for the period was \$177.94, a daily average of \$14.88.

A saving of 2,000,000 tons of coal a year is expected to result from the Fuel Administration's order making a reduction of 25 per cent. in the amount of fuel which may be used by the manufacturers of cement.

Hope of better transportation service for coal shipments is contained in the announcement of the Railroad Administration that to date 80 per cent. more grain has been handled than at the corresponding time of last year.

Five cents may be added to the mine price of coal delivered directly from mine tipples to locomotive tenders, or such other sum as may be agreed upon between the operator and the railroad receiving the coal, the Fuel Administration has ruled.

Equalization of storage was the subject of two conferences last week between Dr. Garfield, J. D. A. Morrow, C. E. Leshner, and other officials of the Fuel Administration, with J. J. Storrow, a delegation from New England and several state administrators. Prompt steps are expected to equalize storage.

The speed ship "Tuckahoe," which was built in the record breaking time of 37 calendar days, continues to make phenomenal time in the important coal carrying trade between Hampton Roads and New England. The "Tuckahoe" has set for other colliers in this trade a pace of four round trips a month. The average has been two round trips a month.



# THE LABOR SITUATION

EDITED BY R. DAWSON HALL

## General Labor Review

The labor situation looks quite critical at present, the practice of paying bonuses at the less responsible operations being the cause of the trouble. A mine with favorable conditions can afford to pay bonuses because the price of mining is set sufficiently high not to close those operations which are working under conditions not so favorable. So the well-circumstanced mines pay bonuses, and the men in adjoining mines wonder why it is not done at their mine where perhaps the conditions are just as favorable, but where the operator is willing only to pay the union wage and feels in fact a mandate from the government compels him to pay no more. Everybody has been opposed to bonuses—the Fuel Administration, the union and the old-time operators—but the practice has only in a few cases been strenuously combatted and the system has gone on. In fact it can be and probably is done more or less secretly and even disavowedly. On Aug. 16 Frank Hayes, the president of the United Mine Workers of America, announced that a meeting would be held today, Aug. 22, at which all the district presidents would be assembled. Mr. Hayes announces that the wage increase “can be met and applied by the coal operators without the necessity of an increase in the selling price of coal to the consuming public,” and he adds that the payment of bonuses by many mine owners “is undisputable evidence that the industry is able to bear an advance in wages.” All will agree that it is clear evidence that certain parties who are paying bonuses, and doubtless some others also, could stand an increase in wage scale without being deprived of their entire income. But to allege that this proves that all could stand the increase is untrue. In fact if the union wins out and prices remain fixed there will be a lot of concerns forced out of business, far more doubtless than the country could afford. Certainly, further readjustments of prices would have to be made.

It is regrettable that the steel business has seen fit to increase wages 10 per cent. just recently thus renewing its raid upon the coal industry, and cutting its own throat, for already the steel companies are complaining that they cannot get coal. A better plan by far would have been to keep the price steady and seek to increase the working force at the steel mills through the operations of the Department of Labor. The bidding for workers increases the industrial unrest. The mine worker is constantly leaving and returning and losing time, efficiency and the industrial habit in the process.

Mr. Hayes says speaking of the payment of bonuses:

“The practice has become so widespread that the stability of the entire industry is threatened and the coal operators themselves are becoming alarmed at their own handiwork.

“The Fuel Administration is conducting investigations to find out the reasons for the conditions and the identity of the

operators who are bidding for labor by the payment of bonuses. Many of the operators’ associations have petitioned the Fuel Administration to save them from the disastrous results of the bonus system.

“If bonuses are eliminated from the pay envelopes of the miners now receiving them the industry will lose thousands of men and it can ill afford to do so, for they are necessary if the production is to be even maintained at its present level and still more necessary if the nation’s demand for a greatly increased output is to be satisfied.

“If the wages of those not now receiving bonuses are not increased by an equivalent of the bonuses now being received by other miners, then the industry faces a sure and certain loss of needed man power.

“For the protection of our entire war program, to keep the wheels of basic industry going full blast, it is necessary that a wage adjustment be made on a basis that will put an end to the wholesale competition for men and hold the miner to the mines where he would like to remain, if he is but given a wage equivalent to that which he would receive if employed in other industries.”

In the anthracite region the matter of a new wage scale is no less urgently discussed, though bonuses do not exist. However, variations in wage scale from mine to mine are common. But these variations are not the real cause of the trouble, for the mine workers want larger increases than these variations represent. As stated last week, the miners

in the northern district want an increase of 25 per cent. The brakemen and “motormen” of the Delaware, Lackawanna & Western R.R., Coal Department, are not satisfied with a raise of that character. They desire their rate lifted from 40c. per hour to 75c.

A few weeks ago some individuals made a request to Fuel Administrator Garfield for permission to reopen the wage scale. The answer was not favorable. Dr. Garfield refused to consider any increase in price outside of the seasonal increase provided and his decision made an increase in wage an impossibility. Recently he has received an application from the officials of the union. So far he has not replied, but it is unlikely that his reply, when received will be favorable. The mine workers contend that the recent awards to the railroad shopmen by the Railroad Administrator and to the street-car men by the War Labor Board give these men more pay than is received by many of the workers in the anthracite industry.

There is a degree of apprehension that some carefully veiled German propaganda are back of the trouble in the anthracite region. Only the most unprincipled person would be guilty of the declarations actually being made at meetings of union men to the effect that the operators are deliberately restricting production. It is almost unbelievable that men representative of the northern anthracite region would accept such sweeping charges and embody them in a resolution, but this they have just done. A charge that

*We urge upon all concerned the absolute necessity of regular attendance at work and the need for working full time in accordance with the terms of our agreement so that every colliery in the anthracite field may be operated to a maximum of its capacity each day in the year as provided for in our agreement. To the end that the mine workers may be provided with all the equipment necessary for efficient operation, we urge upon all operators that they anticipate their needs well in advance, the difficulties of securing mine material at this time being abnormal because of the pressing requirements of other war industries. Where grievances arise and are taken up for settlement as provided for in our agreement, we urge company officials to be prompt and liberal in making adjustments to the end that unnecessary disputes may be avoided and unnecessary delays eliminated, and we pledge upon behalf of the board an earnest endeavor to make prompt adjudication of such disputes as do arise. We further urge upon operators and mine workers alike a united effort to make up for lack of numbers by added efficiency in work and operation.—Anthracite Board of Conciliation.*



an employer is disloyal is a well recognized weapon in the armory of the defeatist, as has been noted in Italy.

As evidence that the enemy aliens are still active, the fact may be even now stated that on Aug. 1 Alexander Frank, an Austrian, was arrested at the Wilson Creek mine, just north of Carbondale, one of the mines of the Delaware & Hudson Co. He was accused of having placed 65 sticks of dynamite in the Wilson mine with the purpose of wrecking it. The explosive was found hidden among props and was uncovered by men who were cleaning out a chamber. The prisoner refused to explain his action.

#### AFTER ALL, FIGHT IS ABOUT WORDS, NOT FACTS

Seward Button, the chief of the Department of Mines of the State of Pennsylvania, it will be remembered, recently declared that the output of anthracite was cut down by drunkenness, idleness and the ease with which a sufficient wage could now be made. The miners want him removed. The general mine committee of subdistrict 4 of district 9 has passed resolutions condemning him and asking Governor Brumbaugh for his removal.

After several paragraphs reproaching Button and exculpating the mine workers, the committee concludes with the following acknowledgement of the facts which perhaps exactly expresses all that the wicked Seward Button tried feebly to make plain:

"Resolved further, that in passing these resolutions we are not unmindful of the fact that no industries with large bodies of employees can be absolutely free from isolated cases of men who neglect their work through drink or who are controlled by the hook worm."

All that Seward Button demands, all the industry demands, all that the nation demands is that the mine workers shall find these men and expose them so that all the world may know them. It is necessary that these men should be brought into line, and the mine workers are the people to bring them. We want the mine workers to "isolate" them still further. They should be made to feel as "isolated" as the "Man Without a Country." The mine workers should show plainly that these drunkards and "hook worm" sufferers are not accepted members of the mining fraternity, and the sober and industrious workmen should do it so plainly that the public would be under no misapprehension about the matter. The removal of Button will not do the work. The drunkard and the laggard must be removed.

#### KENNEDY IS SUGGESTED FOR UNION PRESIDENT

An attempt is being made to groom Thomas Kennedy of the Hazleton district for the presidency in place of Frank B. Hayes who is now filling John P. White's unexpired term. The anthracite mine workers want recognition in the union, the office having gone too frequently, they believe, to the bituminous regions. Kennedy has not made up his mind whether to run or refrain. He says that he will decide definitely before Oct. 1.

The United States Fuel Administration has requested the Roman Catholic priests to eliminate weekday services, which are used by the foreign population as an excuse for absence from work, which absence is often prolonged.

The suggestion has not been received everywhere with favor, though the priests almost universally are heartily in favor of doing all within reason to increase the production of coal. One priest, the Rev. M. A. Lambing, pastor of St. John's Roman Catholic church at Scottdale, made a public statement objecting to the request and said that instead of seeking to stop the weekday religious services the administration should turn its attention to the liquor problem. For every bushel of coal lost through attendance at church, he claims, there are tons lost through insobriety. He charges that the request of the Fuel Administration is in effect putting a tax on Catholic piety.

The strike which occurred Aug. 3 at the Dodge colliery of the Delaware, Lackawanna & Western R.R. Coal Department came to an early end. It involved, however, over 1000 men. The company makes the statement that the cause of the strike was the demand made by six miners

who had been working in the Dunmore No. 1 vein that they be given a higher rate than the scale called for. They were told that they could accept the rate or leave, and quite unexpectedly a strike was declared.

The G. B. Markle Co.'s day men are seeking changes in the wage scale. The engineers of that company are striking for an 8-hour day. They will not come to their work till 7 a.m. Heretofore they would get the engines ready so that the men could be in the mine by that time.

A holy day occurred last week, Aug. 15, the Feast of the Assumption, and that with the great heat had a deterrent effect on production. The Lehigh region did not shut down for that feast day; the miners worked as usual. The Lehigh Coal and Navigation Co.'s collieries in the Panther Creek valley operate on all church holidays and they do not have as much irregular work as elsewhere. The men can be brought to time for irregular attendance as they do not have the broad opportunity to wander from mine to mine afforded them in the northern region where the mines are operated by a number of different companies.

#### HOT WEATHER DRIVES SURFACE WORKERS HOME

The outside workers in the recent "hot spell" complained so much of the heat that an early closing of the collieries was necessary and the electric storms at places made a further closing down obligatory as they put the electrical machinery out of commission. The East Point Coal Co. at Pond Creek was laid idle by the storm of Aug. 12.

The recruiting trouble is now less acute than in the past. It is beginning to be understood that we must not call miners if we do not want them to enter the army. If they are to be suffered to remain at work, it must be clearly understood that they are not wanted in the national service. Once they are called, they will insist on serving, feeling that a failure to serve will subject them to criticism.

Some of the mine workers in West Virginia are making remarkable records, among them Charlie Mitchell, an American miner of Helen's Run, Worthington, W. Va., a mine owned by the Watsons of Fairmont, operating as the Bethlehem Coal Co. Office records show that during the last 12 working days in July Mitchell loaded a total of 217 cars at 82c. a car and that he made a daily average of \$14.83 or a total for the 12 days of \$177.94. This is believed to be the record for northern West Virginia.

The coal operators of western Kentucky are enforcing the "work or fight" law. Under the enactment of the session of 1918 every man from 17 to 60 years of age must work at least 36 hours a week. At two mines in Hopkins County 37 miners were recently arrested for failure to work, the arrests being made as they left the mines. Of these 35 were employees of the Victoria mine and two of the Grapevine Coal Co. Fifteen of the men were fined \$20 and a day's work on the roads, and the others were dismissed. The men had been working at most two days a week.

#### MINERS MUST WORK WHENEVER OCCASION OFFERS

Slow work has been the order of the day at these mines; last year the companies could get few cars and in years previous few orders. The opportunities to work in western Kentucky and in Kentucky generally are none too good even now. In the week ending July 27 the car shortage was 17.3 per cent. and on Aug. 3 12.4 per cent. But the people of Kentucky are bound that Kentuckians shall work whenever they have the opportunity.

The fuel administration in Michigan has given the mine workers almost all their demands. They have conceded to them the 10 per cent. increase in passenger rates, forbidding the operators to charge it to their miners. It has given them the increase in wage of 10c. per ton, but it will take effect Aug. 16 instead of from last fall.

In Arkansas, 400 miners employed at the Central Coal and Coke Co.'s plant No. 6 went on strike Aug. 14. A trifling dispute as to who should sprag the cars at the bottom is said to have been the cause of the strike. Superintendent W. H. Risper says the men refused to sprag the cars and that two trips of 12 cars each were permitted to run into the dump of the mine. The men alleged that the

pit rules exempt them from the work of spragging the mine cars. About three months ago Tom Wimberly, a miner, lost a finger trying to sprag cars and he charges that when he asked for compensation the company refused to pay him, presumably because he was not employed for that purpose. Following this action, the miners gave the company three days' notice that they would not sprag the cars. The notice expired Aug. 14 but the system was not changed. A short time ago the company's employees at its No. 3 mine refused to go to work because the tippie was unsafe. A new one is being built and will be completed about the latter part of this week.

In Nanaimo, British Columbia, a draft-evader by the name of Goodwin was killed in making his arrest and certain labor leaders sought to make capital out of the matter. The funeral was largely attended and trouble was feared between the military police and mine workers. It was at one time declared that if the police were not withdrawn and if draft-evaders were not given immunity a strike of all the coal miners on Vancouver Island would be ordered. But better counsels prevailed and there has been no trouble.

It appears as if the miners of the United States will persist in the celebration of Labor Day, Sept. 2, despite the need for coal. The miners declare they wish to demonstrate to the public on that day the importance of the mine workers' services. It appears that the downward trend of the curve of production for the 5 weeks following the week after the Fourth of July in 1917 will be repeated this year. It has been so far as recorded. The Feast of the Assumption, the hot weather and the poor car service will doubtless show in the coming report of the Geological Survey. Sept. 2 was comparatively harmless last year, but it seems likely that this year it will reduce tonnage considerably.

### Garfield Pleads for More Anthracite

Dr. H. A. Garfield addressed the following letter to the Board of Conciliation in the anthracite region:

"Our country is in the midst of a dreadful war across the sea and is facing a very serious situation at home. The war abroad cannot be won and the situation at home cannot be successfully met without a marked increase in the production of coal.

"Much more coal is needed if General Pershing's army in France is to receive from the great army of mine workers at home the complete support which it so richly deserves. Coal is the bed rock on which our industrial system rests, and without an adequate supply, our war program of ships, food, clothing and arms and ammunition must drag. The papers each day bring word from France of the splendid achievements gained by bravery and sacrifice on the part of our overseas army. Surely our army of mine workers and operators at home will see to it that equally cheering news of our achievements goes to France. We are justly proud of our soldiers and must give them good cause to be justly proud of us.

"Much more coal is needed if hardship and suffering in many homes in this country is to be avoided during the coming winter. Surely our army of mine workers and operators will see to it that this situation is successfully met.

"For an increase in the anthracite tonnage I turn to you, knowing the splendid results which you gentlemen, as the Board of Conciliation, have obtained during the past fifteen years and knowing that you represent the two effective elements necessary to increased production, namely, operators and mine workers. The operators must strive for higher efficiency and for uniformly good physical conditions in their collieries. The mine workers must report for work each day and must not only stay in the mine the hours prescribed by the wage agreement, but must also see to it that there is a marked increase in the tonnage.

"In the anthracite wage agreement, dated May 5, 1916, under which you are now working, there is the following clause:

"An 8-hour day means hours of actual work for all classes of labor, at the usual working place, exclusive of noon time, for six days per week, if the operator desires to work his mines to that extent, excepting only legal holidays. The time required in going to and coming from the place of employment in or above the mine shall not include any part of the day's labor. Drivers shall take their mules

from the stables to the usual working place before starting time and shall return them to the stables after quitting time, compensation for such service being included in the day rates established for this class of labor. If, because of breakdowns, repairs, or the requirements of transportation, or other causes essential to efficient operation, it is found necessary to extend the normal workday of any employee, or any class of employees, the operator may do so, at his option, paying for overtime a proportional rate per hour as determined from the rates established under Section 1 hereof."

"Under date of Apr. 26, 1917, in a joint conference of anthracite operators and miners, the following resolution was unanimously adopted:

"Be it resolved by the coal operators and mine workers, represented in the Anthracite Joint Conference, that we hereby instruct the Conciliation Board to offer its services to the Council of National Defense and to render such assistance to the council in maintaining the production of coal and in enlisting the maximum cooperation of employers and employees represented in the anthracite coal-mining industry, so as to meet the requirements and needs of the Government as set forth by the Council of National Defense; and also to provide for public necessities."

"The offer of assistance expressed in the resolution has been accepted by the Council of National Defense. It is therefore with a feeling of full confidence that I look to the anthracite industry to meet the needs of the nation in this crisis. This will require the very best effort of every one from the highest official to the smallest breaker boy and I know that it will be cheerfully given. The plans to be followed to make every man and boy connected with the industry realize the gravity of the crisis and his own individual responsibility in it, I shall leave entirely to you, saying only that there must be no doubt in the minds of the operators and mine workers but that the anthracite tonnage must be largely increased. Here is a splendid opportunity for the highest patriotic service. You and your fellow workers will make the best of it, I'm sure."

The Board of Conciliation promptly wrote a letter addressed to the anthracite operators and mine workers, saying:

"To the end that the efforts of the United States Fuel Administration may be successful, we solicit the utmost measure of your whole-hearted patriotic cooperation toward adequately meeting this great public emergency. We recognize that the best efforts of operators are now handicapped by the abnormal difficulty in securing necessary machinery and material for operation. We also recognize that the ranks of the mine workers are depleted, but we believe that greater production can be secured in spite of these difficulties if the program of united effort herein suggested is generously supported by mine workers and operators alike, working together in full cooperation and sympathy to the common end of winning the war and supporting with the last pound of energy your neighbors, friends, relatives and fellow workmen now at the front in France in the National service."

The latter part of the letter is displayed in the center of the first part of this department. The letter was signed by W. L. Connell, S. D. Warriner, W. J. Richards, John T. Dempsey, Thomas Kennedy and James Matthews, comprising the full board.

### Miners Want Commutation Service

The mine workers at Herrin, Ill., who work in the Willamson and Franklin County field lying to the north of that village, are complaining that "miners' trains" are not provided to take them to their work. They purpose forming a committee to deal directly at Washington with William G. McAdoo, Director of Railroads, and they have requested Congressman E. E. Dennison to head that committee.

The mines near the town of Herrin have, they claim, the better supply of mine workers while the newer and more efficient mines, where a greater tonnage per man can be produced, being farther away, can hardly get any men at all. The mine workers point out that every day in the southern Illinois fields miners' trains leave Sparta, Duquoin, Christopher, Harrisburg and Marion, and every night bring the miners back. They think they are even better entitled to this service at Herrin, for the mines surrounding Herrin produce more coal than the mines surrounding any one of the cities mentioned.



## EDITORIALS

### The Miner as a Casual Worker

A LITTLE thought will convince us that the miner is not like other men. Somehow he has the casual habit, that habit which we rightly regard as typical of the Middle Ages. No longer are there 300 working days in his year; in fact there are far from that number. Even when the mines are working irregularly the days on which they do work do not find a full force engaged. The miner is a casual worker with the industrial habit only partly developed.

The casual character of the miner's life arises from two causes—the irregularity of the opportunity for labor and the fact that mining labor has always been recruited from that industry which is most casual and seasonal, an industry, in fact, which we shall see later has hardened its casual character in some countries by something approaching ordinance.

It is needless to speak regarding the opportunity offered for steady work. Everyone who knows the industry is aware that the mines, in normal years, only work about 200 days. There is hope, however, for steadier work in the future. The industrial use of coal is likely to grow larger per capita, whereas the domestic use of it per capita is likely to be more or less steady. We shall never ask for more than a comfortable heat, for anything above that heat is undesirable.

Houses are now being built so as to economize what heat is supplied. The leaky old frame houses of the past let in an immense quantity of cold air and did not keep out the cold because the walls were too thin to prevent the conduction of heat. While the number of rooms to be heated per capita is an uncertain quantity, it does not seem likely to increase with time. True, the working-man is demanding more rooms, the rich man is building himself a spacious house, but at the same time the tendency of the middle class in the big cities is toward small apartments and toward more aggregate living with consequent saving in heat.

Moreover, byproduct coke, which is more and more used as a domestic fuel, can be stored and therefore its use will help to spread the production of coal over the year. The water powers also, which need supplementing with coal during the summer and are well supplied by the streams in the winter, serve to act as a balance wheel to the industry.

So much for the future. What about the present? The domestic requirements of bituminous coal are only 12 per cent. of the whole bituminous production, according to Dr. Garfield's summary, which we print on another page. The Geological Survey in 1915 put it at 16 per cent., coupling with it the small steam trade. As already indicated it is the domestic trade which is markedly seasonal.

However, it is true there are other uses that are seasonal. In the winter more gas is consumed and the railroads use more fuel, and possibly head winds at sea may cause a greater use of bunker coal. The mines use

more coal both for power and heat. (This latter item is credited separately in Dr. Garfield's account.) But on the whole the seasonal character of the trade even in normal years applies only to about 15 per cent. of the product, for a part of the domestic business is for summer consumption though not much is used in that season. Thus, all things considered, the seasonal character of the coal trade is not so great as might be thought. A trifling change in methods might make the bituminous industry run evenly the year round. No account has been taken of the anthracite industry, for that is already more or less satisfactorily stabilized by the regulation in price.

The other important cause for the casual work of the bituminous coal miner arises from his past associations. The mining industry has been recruited in this country largely from native and foreign farmers, and farming is one of the most seasonal of industries. In consequence the farmer is quite apt to be casual in his labor.

So much is this true of the farmer that most of the great feast days which are so faithfully celebrated by the foreign population occur in the winter. The summer is relatively free of celebration probably because such days as were instituted for that period died a natural death, lacking public support. The inception of many of these feasts dates back several centuries before the Christian era; others are not so old, but are related to those which have an earlier existence. They are mostly placed in that part of the year when people engaged in agriculture found celebration did not interfere with attention to their physical needs. At present they tend to come just when our industrial life ordinarily demands the greatest amount of activity and when the demand for coal gives the operator the intensest anxiety.

But it is not necessary that these feasts should thus interfere with production. Foreigners coming to this country and engaging in other occupations than mining do not keep them to anything like the same extent as the mining population. The verdict is, "You must work on these days or move out," and they work. They soon get the industrial habit of working whenever the chance offers.

In many years the mines have more men than they want. When this occurs the operator does not care much whether his men work or are idle. When, later, men get scarce those who have been secured have to be nursed. The operator is like the man with a leaky roof. When the weather was fine, repairs of the roof were not necessary; when it rained, it was impossible to repair it. It was therefore never repaired. Similarly, in the mines there is never any serious attempt to correct the casual habit. The operator feels it would be unjust as well as uncalled for to do it so long as his operation works so casually, and, when the mine runs steadily he is afraid that to correct the failing would cause him to lose men, for output is dearer to him than discipline.



Some cure should be found. It is probable that it will be worth all that it costs in the satisfactory opulence that the miner will enjoy when he works every day, and in the certainty that he will feel if he knows every day that the man on whose services he relies to help him get out his tonnage will not be on a spree and leave him in the lurch.

### Drivers of Yesterday and Today

**A** WHILE ago a good friend of this publication, and a man with wide knowledge of mining, wrote a letter of criticism from which a few words might be culled as a text for a further dissertation on the proposition to which his objection was taken. He says:

"Some time ago I saw an article in *Coal Age* in which you predicted that the day was not very distant when all employees in coal mines would be paid by the day, and contract work abandoned altogether. I was surprised to see this from you, for you certainly know about coal mining and the class of men who are following it, and you know that unless they are paid by the piece they will do nothing at all. The driver today does not give within 10 per cent. of what he did five years ago in return for the money he receives, neither does the trackman, timberman or, in fact, any other dayman; and I regret exceedingly to say that some of our present-day mining bosses are not much better."

In all of this statement there may be a degree of truth, if the writer means to say that the driver—let us give that functionary our whole attention—does not put himself as whole-heartedly into his work as he did in the years past. If his dictum is that the driver is not making as much of a study of his task, and is not early and late hustling at it as he used to be in the past, we shall not try to reply to that statement. The matter is at least debatable, and so little is it a matter of statistics that we are little disposed to debate it.

The giants of the days that are gone perhaps were not such giants after all—but perhaps they were. We shall not attempt to consider the question. We do know, however, that the industry in general agrees unanimously that the driver of 1918 is not willing to do as good a day's work as the driver of 1915. The war and the shortage of help have wrought a marvelous change in him in those three short years.

But the assertion we tried to make was not that the driver and his like were trying to do as much work or were working as hard as ever, but that they were actually *achieving more*. Formerly the driver hauled 2 or 3 one-ton cars on a level; now with his hand on the controller of the locomotive he pulls 25 two-ton cars. Formerly he drove his mule at three to six miles an hour, now he "lazies along" at 10 miles.

Formerly he waited long at partings, now as there are few "motormen" on a run he goes along merrily most of the time. It being as easy to sit on a moving locomotive as on one standing still, he has no tendency to keep his controller handle at "off." We do not say he is morally better; we say he is so aided in his work by mechanical appliances that he does not do 10 per cent. less but from 1000 to 3000 per cent. more.

Where he still walks along with his hand on a mule's hip and a whip coiled over the kerchief on his neck, we have shortened his journey by moving the locomotive parting so that without excessive work he is handling

a large tonnage. He no longer has to go clear to daylight or half that distance with every trip he gathers. Efficiency has been thrust upon him, whether he will or no. Efficiency is always sure sooner or later to be thrust on the dayman. We cannot afford to leave him to his native inefficiency. On the whole he does not care much so long as his wage is secure.

The contract miner, of course, has had some help given him. When mines were not unionized or when the unions were weak, machines were introduced and a scale profitable to miner and operator introduced. But now the union is adamant. There must be no more mechanical changes unless the miner gets the whole benefit. In fact the union has been trying to readjust matters so as to deprive the machine operator of his whole advantage. The union wants the operator to shoulder the risk and expense, to supply the power and give his men the benefit. As a result we read about this and that new type of machine for lightening labor, but few are interested. You have to prove not only that it lightens labor, but that the union will permit that lessening of labor to show a lessening in the cost per ton.

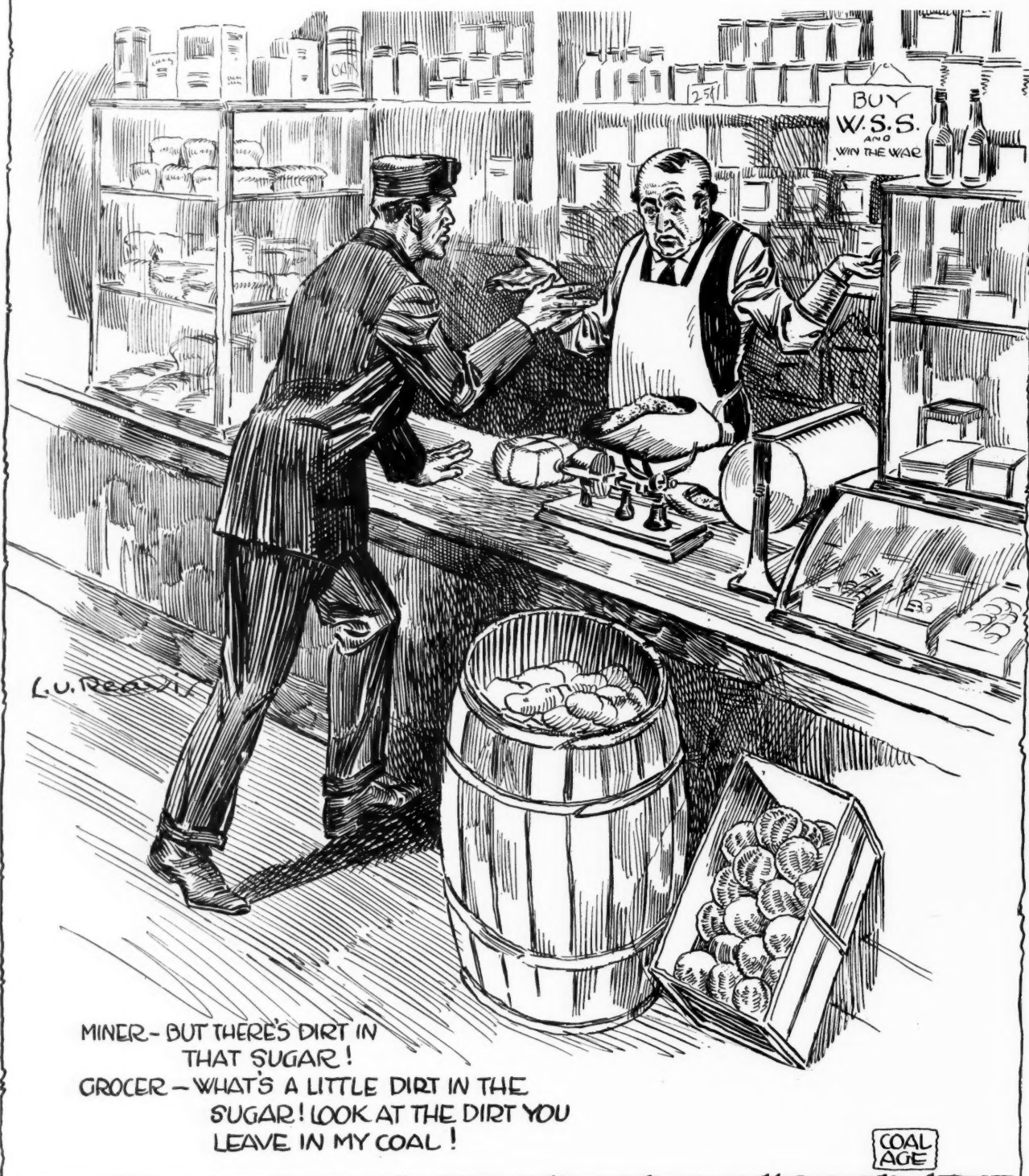
The various elements in the cost of handling coal after it is mined have gone up but little. The cost of mining has steadily gone up. We are getting less and less for our money, and the condition will never be cured till day-labor replaces piece labor. Then the efficiency of changes made in mining methods will be placed squarely up to the operator, and the gains made by successful variation of those methods will go to him. There will be an income in the providing of facilities for operation; there will be a reward for inventiveness; supervision will not be an expense, but a source of income; the mine will become a factory. We shall not spread our forces over a whole township. We shall bring them together and give them the many mechanical devices they need.

Suppose the coke drawers had formed a powerful union and had secured a scale for drawing which would not permit of variation. Where would the various mechanical devices for coke drawing have gone? To the scrap heap. Fortunately, it was found possible to pay for coke drawing by machine at a lower scale or more generally by the day. Immediately the ovens were made of a different shape, the coke pusher made its appearance and the coke loader followed.

There is a big future for the man who will rearrange his mines so as to make close supervision possible, who will so place his forces that the men can work without delays and who will then by mechanical aids make the performance of the work easy. But the reward will only come to him if he operates his mine with day labor and secures for himself the profit of the methodical plans put in operation. On the other hand, if, having given of his best and having expended his money, he is to find the cost of digging and loading coal is as heavy as ever, the cost of power, supervision, repairs, ventilation, drainage and every other item increased, where will be his reward except as he can get it from larger output provided per unit of tippable force?

Mere hustling will never result in effectual progress. We can speed up the workman till his muscles refuse further service but only machine operation will really save the situation and there will be few machines introduced unless the operator profits by introducing them.

## Sauce for Goose Is Sauce for Gander



MINER - BUT THERE'S DIRT IN  
THAT SUGAR!

GROCER - WHAT'S A LITTLE DIRT IN THE  
SUGAR! LOOK AT THE DIRT YOU  
LEAVE IN MY COAL!

COAL  
AGE

You don't want to buy a poor article, neither do other people. Give the public good clean coal. They are entitled to it. They don't expect to get roof-slate, bone and sulphur when they pay for clean coal.



## DISCUSSION BY READERS

### Scraper Mining in Low Seams

*Letter No. 1*—Kindly allow me to draw attention to what appears to be a serious misstatement of facts in regard to the originator of the scheme for utilizing a scraper for conveying the coal from the face of a chamber to the gangway, in the working of a seam of low coal.

In the "Annual Equipment Issue" of *Coal Age*, July 20, p. 92, appears an article written by H. G. Davis, in which he mentions what he is pleased to call "a simple face conveyor." After describing the device and its application to practice in mines of the Delaware & Hudson Co., working a 38-in. seam of anthracite, Mr. Davis states that Cadwallader Evans, Jr., now with the International Salt Co., in northern New York, "was the first to introduce this system in the coal mines," and adds, "I am under the impression that he has patented some parts of the equipment."

While Mr. Davis gives no dates, in this connection, permit me to draw attention to the fact that, to the best of my knowledge, this matter was first brought to the attention of the coal industry in the anthracite region, in an article that was published in the *Employees' Magazine* of the Lehigh Valley Coal Co., April 1916, pp. 67-69, where it is stated that the scraper was tried out about two years previous, Jan. 15, 1914, at the Seneca Colliery of the company.

#### WHERE THE FIRST SCRAPER WAS BUILT AND USED

The article goes on to say that the scraper was built in the Seneca Colliery blacksmith shop and had been in constant use up to that time, a double-drum electric haulage engine being employed to pull the scraper back and forth, in place of mule power. The writer of the article mentions further that the scraper was then being successfully used in the following four collieries of the Lackawanna Division: Seneca, Maltby, Stevens and Exeter. This article was reprinted, at the time, in the issue of *Coal Age*, June 17, 1916, p. 1044.

If I am correctly informed, the Mr. Evans to whom I have referred did not enter the employ of the Delaware & Hudson Co., where Mr. Davis states the scraper has now been introduced, until the latter part of 1915, coming there from Nova Scotia. It is worthy of note that one of the employees of the Lehigh Valley Coal Co., who was acquainted with the experiments that had been conducted at the Seneca Colliery of that company, and who had sketches of the system there employed, left the Lehigh Valley Company and started to work for the Delaware & Hudson Co., shortly after Mr. Evans became one of the officials of that company.

It would seem an injustice to the coal-mining industry that Mr. Evans should take any steps, if such is the fact, to patent this device that has been in use so long a time in anthracite mines. While it cannot be claimed that the scheme is perfect, it is far superior

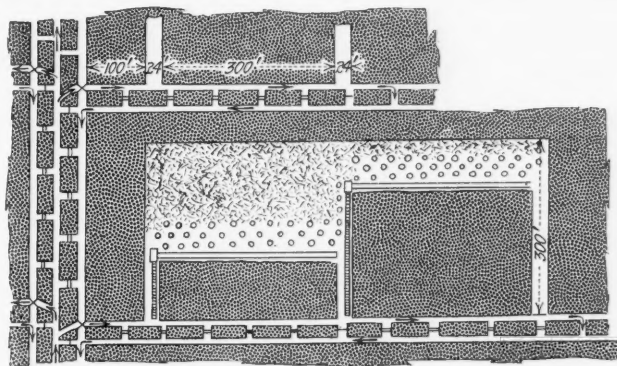
to any other method that has yet been tried. I can state with certainty that those who first developed the idea had no thought of monopolizing it by applying for a United States patent, their whole purpose being to make more profitable the mining of low coal in the anthracite mines.

JOHN LLOYD, Efficiency Engineer,  
Wilkes-Barre, Penn. The Lehigh Valley Coal Co.

### Coal Conveyors at the Face

*Letter No. 2*—Having had considerable experience with the Blakett conveyor, when mining coal on the longwall advancing plan, the letter of "Mining Engineer," *Coal Age*, July 20, p. 142, drawing attention to the great advantage of the face conveyor in mining coal under favorable conditions, interested me.

The face conveyor is particularly adapted to the mining of thin coal; and, believing that its use in this connection will be of interest, I beg to present a plan that I have found can be quite generally applied to



PROPOSED ARRANGEMENT OF CONVEYOR FACES

the working of thin seams of coal and makes possible a good percentage of extraction at a reduced cost of operation.

The plan presents the following advantages that are well worthy of consideration: (1) The work is concentrated in a small area, which bears a marked contrast to any form of room-and-pillar working where the men are much scattered. (2) The work is all retreat-ing and the loss of much coal thereby avoided. (3) A greater degree of safety is secured than where pillar work is necessary. (4) A less length of track and fewer cars are required.

#### OUTLINE OF METHOD OF WORKING THIN COAL

Briefly described, the plan of working is as follows: As shown in the accompanying figure, cross-entries or levels are driven to the right and left of the main haulage road and air-courses, at distances of 350 ft. apart. The main entries are driven three abreast on the full pitch of the seam, the center entry being the



main haulage road and intake air-course, while the two side entries are the main return airways.

The two return airways are flanked by pillars of coal 100 or 150 ft. in thickness, depending on the roof pressure and the character of the overlying and underlying strata. Beyond this pillar, as shown in the figure, rooms are turned to the rise at distances of 300 ft. apart, and driven up a distance of 100 yd., where they are connected by driving a heading across the face. A 50-ft. pillar of solid coal separates the faces of these rooms from the next pair of cross-entries.

When all is ready, a conveyor is installed at the face. Bottom is lifted in the room so as to permit the conveyor to load the coal directly into the cars standing on the track at the head of the room. About 15 men can work on a single face 300 ft. long, which gives each man 20 ft. of coal to load. This arrangement makes possible a large output of coal at a reduced cost of operation. As shown in the figure, two or three rows of posts are kept standing back of the conveyor. The posts are set at regular distances apart and staggered. As the work advances, the conveyor is moved forward, and the timbers in the rear row are then drawn and stood nearer the face.

#### GENERAL FORM OF THE BLACKETT CONVEYOR

The general form of construction of the Blackett conveyor is well enough known not to need further description than to say that it is of the type known as "scraper conveyors." The troughs are made in lengths of 6 ft. and are flexible enough to allow of considerable bending, which permits the line of the conveyor to be moved forward 5 ft. in 20 yd. The troughs are 10 in. in height and 19 in. wide on top. The endless chain that operates the scrapers passes over a return drum, which rests on a sliding carriage that permits the tension of the chain to be increased when necessary. I have found the Sylvester post-drawing chain of great assistance in moving the drum forward.

In one mine, in England, the installing of a face conveyor increased the output from 4 tons to 10 tons per man, while the labor required was much less, eight men and two boys taking the place of 18 men and 18 boys under the old system.

A conveyor known as the Micky conveyor, which was used to a limited extent, consisted of a low car attached to a rope passing around a sheave at each end of the face. This car was hauled to and fro along the face and traveled on rails that extended over the top of the mine car standing on the track at the roadhead. The contents of this truck conveyor was dumped into the mine car through doors in its bottom.

Oak Hill, W. Va.

WILLIAM DICKINSON.

## Mining Equipment

*Letter No. 7*—Many interesting and instructive articles have appeared in *Coal Age*, from time to time, under the caption "Mining Equipment." The letter signed "Patriot," July 20, p. 140, proved particularly interesting to me. Like the writer of that letter, I find it hard to understand why the average coal-mining executive seldom makes public his views and opinions when they would be of such great benefit to the industry.

I heartily endorse the statement made in the letter to which I have just referred that "the columns of *Coal Age* perform a powerful function." Let me add further, that the views presented in these columns reach a far greater number of interested people than when spoken at an institute meeting or other assembly.

In his letter "Patriot" attributes the lack of coöperation and understanding between many men of the coal-mining fraternity, to business policy, professional jealousy, or a failure to see the advantages to be gained by proper intercourse on matters relating to the operations in their charge. I am convinced however, that a more probable cause is carelessness or, at times, press of business. Allow me to second what has already been said by this writer, and urge compliance with his suggestion that coal-mining executives acquaint us, through the columns of *Coal Age*, with the results they have obtained from the labor, equipment and methods employed.

#### OFFICIALS GENERALLY WILLING TO IMPART INFORMATION WHEN ASKED

It has been my experience that executives of coal companies seldom refuse and are generally glad to supply information concerning the performance of equipment they have installed, whenever this information is asked. I have observed the same willingness to impart information when these executives have been present at institute meetings and other places where such matters were being discussed. This strengthens my conclusion that their failure to offer these facts and figures, for publication in the coal-mining press, does not arise from unwillingness on their part to give the information desired. It is more the result of thoughtlessness or lack of time.

Let me say, in closing, that at the present time many thousands of dollars' worth of equipment is being purchased by various coal-mining companies, for improving their facilities for producing, transporting and preparing coal for the market. This makes it all the more urgent that every coal-mining executive should charge himself with the duty of informing his fellow workers of results that will be of benefit to all.

Pittsburgh, Penn.

WORKER.

## Ventilating a Gassy Slope Mine

*Letter No. 2*—Mining men will differ, no doubt, in respect to many details regarding the ventilation of a gassy mine, but the information asked by "Mine Foreman," *Coal Age*, July 25, p. 191, as to the best system of ventilating a slope mine, driven in a seam dipping 6 per cent. and generating large quantities of gas, should bring out many good practical ideas.

My theory regarding the ventilation of such a mine coincides, almost precisely, with that described by the editor, in his reply to this inquiry. It is my opinion that such a mine should not be opened by less than three main slopes driven on the full dip of the seam. These slopes should have a cross-section not less than 6 x 10 ft. above the roadbed and, as stated, the center entry should be the intake and main haulage road, while the two side entries are the return air-courses.

In my opinion, it would be well to turn off the first pair of levels to the right and left of the main road, at a distance of 100 or 125 yd. from the mouth of the mine,

instead of 150 yd., as suggested by the editor. My idea is that a shorter distance would give less trouble in the handling of the gas generated in this seam. The three slopes should all be driven at the same time, in order to get the best results in the ventilation of the mine and enable the crosscuts to be driven at proper intervals.

As has been stated, the first-right and first-left levels should be intakes and haulage roads, while the second-right and -left levels are the return airways. This arrangement will afford the best haulage facilities for the rooms driven to the rise of the levels. An overcast must be built at the mouth of each of the first-right and -left entries, so as to conduct the main return air over the haulage road on these levels.

For the ventilation of the mine, I would install two 7-ft. centrifugal fans, placing one of these at the mouth of each return airway and operating one continuously, while the other is held in reserve for use in emergency. By this system, no difficulty should be anticipated in securing the proper ventilation of the mine. The condition is such that the colder intake air will tend to fall readily, following the dip of the seam; but, after its temperature has risen, owing to the absorption of the natural heat of the mine, the return air will follow the rise of the seam, in passing out of the mine. This will have the practical effect of making the entire circulation in the mine ascensional, and less power will be required to maintain the circulation. I shall watch the further discussion of this subject with interest.

OSCAR JONES,  
Gas Inspector.

Worley, Ky.

*Letter No. 3*—"Mine Foreman," of Tower Hill, Va., *Coal Age*, July 25, p. 191, asks a very fair and timely question, hoping to gain what information is available in respect to the best method of ventilating a slope mine in a gassy seam pitching 6 per cent. He is wise in seeking this information before starting to spend money in the development of such a proposition.

There are many questions that one would naturally consider when opening a mine, aside from that of ventilation. These relate to haulage, drainage, economy of mining the coal and operation of the mine, including the installation of pipe lines and conductors, for supplying power and light in the workings, and suitable means of ingress and egress that would insure the greatest degree of safety.

Regarding ventilation, my plan would be to drive five headings on the dip of the seam. Two of these would be used as intake airways and haulage roads, while the remaining three headings would serve as return airways. The location of these main slopes is important. They should be central to the bulk of the coal to be mined.

At the first favorable opportunity, when the slopes have been driven a suitable distance, I would start three branch headings, say to the right, and a short distance further down the slope three branch headings to the left. It would be my purpose not to drive these right and left branch headings opposite to each other, believing thus to afford greater strength in the roof formation and provide better facilities for laying the switches and making other haulage arrangements.

Assuming favorable conditions, the present improved methods of machine mining will yield as good coal in the headings as can be obtained in rooms. For this reason, unless the demand for coal was urgent, I would probably start no rooms until the headings had been driven, say 800 ft. This plan would give ample means for a large production of coal when needed. My preference would be to limit the length of the branch headings to say, 1200 ft.

For the ventilation of the mine, two large fans should be installed, in the most suitable place, at or near the mouths of the three return airways. These fans should be of the reversible type to permit of reversing the air current should this be needed.

Perryopolis, Penn.

R. W. LIGHTBURN.

## Sealing Off Fire on Intake

*Letter No. 11*—Kindly permit me to offer my plan of sealing off the fire, described by "Ancora," *Coal Age*, June 22, p. 1173, as having gained such headway on the intake of a pair of blind headings that it has been decided to seal off the entries.

To avoid tedious repetition, I will pass over the suggestions of the several correspondents in regard to approaching the fire with caution, employing two crews to relieve each other, and short-circuiting a portion of the air current by opening the nearest stopping outby from the fire. Further, I would slow down the ventilator slightly, or otherwise reduce the volume of air passing in these headings, believing that 30,000 cu.ft. per min. is more air than is needed at present under prevailing conditions. My opinion is that sufficient air should be permitted to pass over the fire to carry off the smoke and gases while the first stopping is being built on the intake.

### SUGGESTS CLOSING THE INTAKE FIRST

My plan is to build the intake stopping first, leaving an opening in it 2 x 2 ft., which is to be closed later, by a trapdoor, when the return stopping is in place. Then, before starting to build the return stopping, I would speed up the fan and increase the circulation, in these entries, to 50,000 cu.ft. per min., if possible. Next, erect a brattice on the return airway so as to deflect this current toward the place where the stopping is to be built. This would have the effect of driving back the gases generated by the fire. Both the intake and return stoppings should be built just inby from the crosscut opened, or about 18 yd. outby from the fire.

My theory is that, under this arrangement, sufficient air will be supplied to the fire to produce carbon dioxide, which will have an extinctive effect and prevent the formation of an explosive mixture. A 2-in. pipe should be built into both the intake and the return stoppings, about a foot from the roof. Near the bottom of the return stopping, I would also place a 3-in. pipe with a valve, and another 2-in. pipe about half way between the two, as that might be found useful in case it was decided to employ water in extinguishing the fire. Having completed and sealed the return stopping, I would immediately close the trapdoor in the intake stopping, and leave the fire to die out for want of air.

My plan contemplates the possibility of being compelled to drown out the fire by the use of water. For



that purpose, I would build good substantial stoppings and make these water-tight. It is not stated in the inquiry whether the headings are running to the rise or to the dip or are level, and these conditions may modify the method slightly, in case it becomes necessary to use water to extinguish the fire.

If the headings are running to the rise and making some water, this will naturally drain from the face toward the fire, while if the headings run to the dip, it will be necessary to pump a considerable quantity of water through the pipes built into the stoppings. The same is true, but a less quantity will be required, if the headings are level.

JOHN L. WHITE.

Portage, Penn.

*Letter No. 12*—When this discussion was first started I decided to wait and watch its development, as I knew many practical ideas would be advanced. Before giving my own views, formed by a long practical experience in the fighting of many mine fires, permit me to comment briefly on some of the statements that have been made.

The discussion was opened by W. H. Noone, *Coal Age*, July 6, p. 33. After naming as the three dangers encountered in mine fires, the following: (1) the formation of an explosive mixture; (2) the generation of poisonous gases when the air supply is limited; and (3) the ill-effects of these gases on the workmen, Mr. Noone suggests the building of the first stopping on the intake, after short-circuiting the air current by opening the stopping next outby from the fire. He then proceeds to direct this air current up the return airway and through the last crosscut, extending it from that point inby to the face of each heading.

#### VALUABLE TIME LOST IN BUILDING BRATTICES

In all my experience in fighting fires in mines, I have never known or heard of this method being employed. In my opinion, valuable time would be lost in building this line of brattice, if indeed it would be possible or safe to attempt. Let me suggest, also, that both the intake and return stoppings should be as close as possible to the opened crosscut, in order to supply fresh air to the workmen.

In his letter, July 13, p. 79, Oscar Jones makes some good suggestions, but let me say that any fire that would permit of the building of both stoppings at the same time, as he proposes, is a fire that could be extinguished in another way and avoid the necessity of building the stoppings. Another interesting letter is presented by R. W. Lightburn, July 20, p. 143. His plan of carrying the stoppings to a height of 4 or 5 ft., before attempting to complete either of them, is a good one, but he omits to mention the need of inserting a pipe in the stopping, which is always important, and, like Mr. Jones, he suggests building both stoppings at the same time.

On the same page, another correspondent, Thomas Jones, starts his letter well, but I fail to see the advantage of sealing the return airway first, as he advocates. By so doing he would subject the workmen to the heat, smoke and poisonous gases, coming from the fire. In my opinion, this could hardly be done, except at a great distance out on the entry; but that would be a bad plan. Again, his proposal to "wait a short time to allow the space behind this stopping to fill with the smoke and gases generated by the fire," is of

doubtful value; because there will be some circulation of air, which will flow into the space along the floor of the entry still open and discharge at the roof. This will operate to dilute the gases Mr. Jones hopes will shortly fill the space back of the stopping.

#### PROPOSED METHOD OF PROCEDURE

In describing my own method or plan, let me say that this is a fire that has passed the first stages of development when it might have been handled in the ordinary way, and must now be sealed off so as to enable other districts of the mine to be worked with safety while waiting for the fire to gradually die out.

Assuming that all necessary material and tools have been collected quickly and that a few cool-headed men, organized under an experienced leader, have reached the place, the first step is to open the nearest possible stopping outby from the fire so as to short-circuit the air at that point. Then, start to cut out the floor and rib, on the intake, as close to the fire as practicable, and set in place 8 x 10-in. square timbers to enable a double-plank partition or stopping to be constructed and the 10-in. space between the planking filled with clay. This stopping should be sealed and made air-tight at once, so that no fresh air can reach the fire.

Having completed the intake stopping, work on the return must be started immediately. The men must be worked in relays, using only safety lamps. First, a curtain is hung on a frame, a short distance inby from the opened crosscut. Follow this immediately with a light 1-in. board brattice, the men holding their heads low while performing the work, so as to avoid, as far as possible, the smoke and gases traveling at the roof.

The light brattice just erected will keep back much of the smoke and gases from the men, while the heavy double-plank stopping is being put in next. This is constructed in the same manner as that built on the intake, except that a 2- or 3-in. pipe 6 ft. long must be built in this stopping and provided with a valve. It is important to permit no one to enter the return airway while the work of sealing off the fire is being performed, except the men engaged in building the stoppings, and they must be aided, in every way possible, by directing the fresh air current so as to reach them.

#### CONDITION OF AIR BEHIND STOPPINGS

Regarding the two questions relating to the condition of the air behind the stoppings, it may be said that the conditions would be much the same whether the first stopping were built on the intake or on the return. The air behind the stopping would be unfit to breathe and, perhaps, explosive owing to the presence of carbon monoxide. Having never sealed the return airway first, I can give no opinion based on that method. Tests taken after both airways are sealed show that the air behind the stopping is generally non-explosive, but will kill a mouse in less than five minutes when exposed to the flow from the mouth of the pipe.

In closing, allow me to say that, in the handling of 23 fires, by sealing them off with air-tight stoppings, none of the workmen have become unconscious or been injured in any way. In one or more instances there have been as much as 40 tons of coal burned, but the fire has been extinguished without delaying the work.

Worley, Ky.

GAS INSPECTOR.

## INQUIRIES OF GENERAL INTEREST

### Exhaust of Gasoline Locomotives

We have had some discussion, regarding the danger of the exhaust from a four-cylinder gasoline locomotive when used in a mine. I would like to ask how much air will it take to render harmless the exhaust from this locomotive, assuming that the four cylinders are each 4 x 5 in. and the engine is run at a speed at 1500 r.p.m.

Also, kindly state to what extent carbon monoxide (CO) is soluble in water.

\_\_\_\_\_, Tenn.

MOTORMAN.

To give an answer to this question based on the volume of burnt gases exhausted from the four cylinders of this engine when running at the given speed would be misleading and of no practical value, in respect to the danger arising from the poisonous gases that are liable to form a considerable proportion of the volume of the exhaust.

It is well known that extremely small percentages of carbon monoxide are highly poisonous and may often prove fatal when breathed for any length of time. On the other hand, it is practically impossible to name the percentage of this gas, in the exhaust of a gasoline locomotive, that would represent even average conditions in mining practice. Some have estimated that, when a gasoline engine is running normally, under favorable conditions, the exhaust from the cylinders contains about 1 per cent of carbon monoxide.

In the series of tests made by the engineers of the Federal Bureau of Mines, and described and tabulated in Bulletin 74, published by the Bureau, it was found that the percentage of carbon monoxide, in the exhaust of this type of engine, varied from a fraction of 1 per cent. to 15½ per cent. This wide variation, it was stated, is dependent on the rate of fuel consumption as determined by the adjustment of the carburetor, speed of engine, proportion of load, and temperature, as determined by the efficiency of the water jacket. These tests showed that the maximum production of carbon monoxide occurred in the exhaust when the engine was running at full speed, under full load, requiring a high rate of fuel consumption.

Very much will depend on the intelligence and skill of the motorman and his ability to adjust the carburetor to the speed and load under which he is running. The percentage of carbon monoxide increases with the temperature of the mixture; and, on this account, it is of the utmost importance to maintain a cool water jacket.

As is well known, the usual construction of the engine is such that each cylinder gives one explosion during each alternate revolution of the shaft. A four-cylinder engine would thus give two explosions per revolution of the engine, or 3000 explosions per minute when running at a speed of 1500 r.p.m. The piston displacement of one 4 x 5-in. cylinder is  $4(0.7854 \times 5^2) = 78.54$  cu.in. in a single stroke.

A calculation based on 3000 explosions per minute in this engine, gives, therefore, for the volume of exhaust gases  $(78.54 \times 3000) \div 1728 = 136\frac{1}{2}$  cu.ft. per min. Assuming the worst condition shown in the tests of the Bureau of Mines, where the exhaust gases were found to contain 15.5 per cent. carbon monoxide, would give  $136\frac{1}{2} \times 0.155 = 21\frac{1}{2}$  cu.ft. carbon monoxide gas.

One-tenth of 1 per cent. of this gas in the mine air would be extremely dangerous where the men are forced to breathe such air continuously. A degree of safety can only be assumed to be attained when the percentage of this gas is reduced to 0.01 per cent. To secure this condition, on the assumed basis, would require  $21 \div 0.0001 = 210,000$  cu.ft. of air in circulation.

Assuming a normal velocity of 600 ft. per min., this circulation would require a sectional area of 350 sq.ft. It must be remembered, however, that we have assumed the worst condition that could arise, as determined by the tests of the Federal Bureau of Mines, although it cannot be denied that such a condition is possible when running the engine under full load, at full speed, especially when the water jacket is not working to the best advantage. Even under favorable conditions, an inexperienced motorman, through an unfortunate combination of circumstances, may develop as bad or even a worse condition than that we have mentioned.

The great danger, in the use of a gasoline locomotive in a poorly ventilated mine or airway, arises when a motorman allows his engine to continue running while he is waiting for a trip. The danger is much increased if the ventilation is temporarily slackened or completely cut off owing to the setting open of a door. An ample circulation of air is always important on the haulage road where a gasoline locomotive is employed. The utmost caution is required also, on the part of a motorman when pulling a heavy trip up a grade and moving with the air current. In such a case, the motorman may be enveloped in the gases exhausted from his engine and be overcome before he is aware of the danger.

On the other hand, the most improved types of locomotive possess advantages that particularly adapt them to the conditions existing at certain mines where there is a long-distance haul from the mouth of the mine to the tippie; or where the main haulage road is of ample size and haulage is performed on the intake air, provided the length of haul, inside of the mine, is not too great.

Attention has often been called in *Coal Age* to the fact that much of the trouble experienced in the operation of gasoline locomotives arises from the employment of incompetent motormen who fail to understand the proper adjustment of the carburetor to the load the motor must carry. It is this lack of adjustment that causes most of the trouble. One of the chief advantages of this type of motor, where conditions will permit of its use, is the economy in its operation.

Carbon monoxide is only slightly soluble in water; 100 vol. of water will dissolve 3 vol. of the gas.



## EXAMINATION QUESTIONS

### Mine Foremen's Examination, Pittsburg, Kan., May 15, 1918

(Selected Questions)

*Ques.*—What precautions would you adopt to prevent the accumulation of firedamp on top of falls where it is difficult to remove the gas with the air current?

*Ans.*—Trouble from gas on falls is mostly met in pillar workings where every effort must be made to prevent its accumulation, by erecting a special form of brattice with canvas so arranged as to deflect the air current to the top of the falls. When the falls are high it is frequently difficult to remove the gas from its lodging place.

Where the condition is particularly dangerous because of the accumulation of large quantities of gas on falls in abandoned places, and it is not practicable to seal off such places completely, the precaution should be taken of sinking drill holes from the surface to tap the gas and drain it from the mines. In any event, the volume of air should be increased as much as possible and the current directed so as to sweep the falls.

*Ques.*—What are the causes of falls of roof, and how would you make an inspection to determine the security of a roof in a mine?

*Ans.*—The extraction of the coal in a seam leaves the roof without support at that place, and the character of the roof may be such that it will tend to fall in the opening, unless it is properly secured by timbers. Falls of roof are caused by driving too large openings or carrying too small pillars, which yield under the great weight above them and cause the roof to break in the opening. The lack of systematic timbering or the use of a system that it not adapted to the condition will often induce a squeeze and cause heavy roof falls. Falls of roof are also caused by the presence of gas or water in the roof strata, whereby an undue pressure is exerted on the roof where it spans an opening.

In order to determine when a roof is secure, a careful examination should be made to detect the presence of any slips or fault lines in the strata. The roof should be sounded with a pick, while holding the other hand against the slate or rock to detect the effect of the blow. The manner of placing the timbers and the condition of the posts should be carefully observed and their effect studied. A careful watch should be kept for the first evidence of a squeeze, which would seriously affect the security of the roof.

*Ques.*—The pressure producing ventilation being 20.8 lb. per sq.ft., what is the water-gage reading?

*Ans.*—The water gage corresponding to a pressure of 20.8 lb. per sq.ft. is  $20.8 \div 5.2 = 4$  in.

*Ques.*—What conditions would guide you in determining the width of headings and rooms?

*Ans.*—The conditions that must be studied, in determining the width of headings and rooms, in coal min-

ing, are the following: Thickness and character of the overlying strata; thickness and inclination of the seam and the hardness of the coal; the character of the roof and floor of the seam; the presence of gas or water in the strata; and, finally, the method of working and system of mining employed.

*Ques.*—How many cubic yards in a room 65 ft. long, 14 ft. wide and 3 ft. high?

*Ans.*—The cubic contents of this room is  $65 \times 14 \times 3 = 2730$  cu.ft.; or  $2730 \div 27 = 101.1$  cu.yd.

*Ques.*—What conditions would a low or lowering barometer indicate in a mine? Explain fully.

*Ans.*—The existence of a low barometer, assuming this is stationary, may be taken as a fair indication that the atmospheric pressure will shortly increase. When the barometer continues falling, however, the atmospheric pressure grows steadily less and less, and this should be taken as a warning of a possible increase in a gaseous condition, in a mine having large abandoned areas that are more or less filled with gas or in workings where the nature of the roof is such that gas accumulates above the draw-slate or other roof formation.

A decrease of atmospheric pressure is always followed by the expansion of gas, which is thus forced out onto the roads and travelingways in the mines. The decrease of atmospheric pressure, indicated by a falling barometer, however, does not have the effect to materially increase the emission of gas from the pores of the strata in which it is confined, as is often supposed. The forces tending to hold the gas occluded in the strata are far more powerful than the slight change in pressure caused by any ordinary fall in the barometer.

*Ques.*—The rubbing surface of a square airway is 150,000 sq.ft.; the length of the airway is 4000 ft.; what is the perimeter?

*Ans.*—The perimeter of this airway is  $150,000 \div 4000 = 37.5$  ft. The airway being square, the length of each side is  $37.5 \div 4 = 9.375$  ft., or 9 ft. 4½ in.

*Ques.*—How should a fan be located with reference to the top of the air shaft? Which do you prefer, direct-connected or belt driven? Give reasons.

*Ans.*—A ventilating fan should never be located directly over the fan shaft, but should be set back a short distance so as to protect it from injury in case of an explosion occurring in the mine. There should also be provided explosion doors above the shaft, which will relieve the pressure should an explosion occur.

A belt-driven connection is generally preferred to direct connection, for the reason that the former gives a greater flexibility, insures a more uniform operation of the fan and a less strain on its members, arising from any sudden change in pressure due to some unexpected occurrence in the mine. A belt connection permits of a gradual absorption of the shock that would otherwise be imparted to the fan shaft and its bearings, besides allowing change of speed by using a smaller or a larger pulley.

# COAL AND COKE NEWS

## Harrisburg, Penn.

Soft-coal production in the central Pennsylvania district is about all that could be expected. According to the statement of the operators, the mines are getting all the cars they can use and the effects are being seen in tonnage shipped. Better car supply is the largest factor in this increase, though the per capita output of the miners has also increased.

Richard W. Gardiner, manager of bituminous coal production in the Pittsburgh district, states that he has no fear of a coal shortage for domestic consumers and essential industries in his field, provided the railroads furnish the necessary cars.

Discussing the matter, Mr. Gardiner said in part: "With the amount of tonnage which will be released at the close of the Lake season, and with the district representative having the authority to order this coal shipped where it is needed, it does not seem possible that the conditions of last winter will be repeated. A number of consumers of coal are of the opinion that the docks at the head of the lakes are receiving too much consideration, but people who think this are losing sight of the seriousness of this lake situation. The only way of getting coal to the great Northwest is by water transportation over the lakes, and when the lakes freeze the movement is stopped."

Mr. Gardiner said that because of the demands of the Lake region and the steel and other essential industries, Canadian shipments of bituminous coal from this district are being curtailed greatly. He said this condition of affairs is likely to exist for some time and that, because of this shortage of cars, shipments to concerns on the preference list may also be considerably curtailed until the lake shipment has been completed, which will be about Oct. 1.

The Anthracite Consumers' League, through Representative Frank C. Reese, will ask the Government to investigate the cost of production of coal. Reese is confident that an investigation will show that the cost does not warrant the high prices. He said: "We would like to know whether there has been included in the cost of coal the money paid for the rental and fixed charges of the Schuylkill Canal, which was taken over by the coal trust and allied railroad companies to avoid its competition in the carrying of coal, and which has since been allowed virtually to go to ruin. The high price now charged for anthracite acts as a depression on industry and business, and the Government should thoroughly inform itself as to the basis of these charges."

## Charleston, W. Va.

If it should transpire that less coal is produced in West Virginia during August than was the case during July, it will be due solely to a statewide shortage of cars in August—a condition of affairs now regarded as an anomaly, since for the most part in the last few months operators have accepted the car supply as a matter of fact. Complaints as to a bad supply come from all parts of the state. Last Saturday the supply dwindled away to 440 cars in the Fairmont district—only about one-fourth of the normal supply. This shortage seems to have been caused by congestion at many points, according to admission of railroad officials, who claim they will have the matter straightened out in the next four or five days.

It is given as the opinion of operators that it is useless to make an effort to increase the production of coal if the continued shortage of cars is permitted to exist. It is hoped, however, that the present week may see the end of the unfavorable conditions.

Mines in the New River field have recovered to some extent from the power shortage of last week, which for a few days put a dent in production figures. This week the operations are forging ahead and are making some progress toward increasing the output over previous months. The New River district is one of the few districts of the state which has not suffered

in the last few days from a poor car supply, and even that district has felt it to a limited extent.

While the Pocahontas and Tug River districts made a fine showing during July, production during the early part of August dropped, with a dull thud, 43,920 tons. Much work seems to have been lost through celebrations of speeding departing selected men for military service since the number of hours worked shows a decrease.

The Fairmont District has been literally "shot to pieces" for the last week. There were not enough cars on hand one day last week to supply railroad fuel orders, and it was feared that there were several railroads which might have to confiscate coal in order to keep their engines going; 440 cars was the sum total on the region—approximately one-fourth of the supply. The number of cars in the region had not fallen as low as that since about the middle of April. However, the supply was much better at the beginning of the week, there being 1931 cars on hand in this region last Monday; the mines supplied by the Monongah division of the Baltimore & Ohio as a result operated to full capacity. On the other hand, the mines on the Monongahela railroad have no cars at all as the result of several cloudbursts. Congestion in the East on the Baltimore & Ohio has been cleaned up, and steps are being taken to prevent a recurrence of such congestion. Restrictions were placed on shipments to the east and as a result there was a large movement to the lakes. The region is still laboring under the pressure to supply coal to Curtis Bay under Government orders.

Some idea of how seriously crippled the mines of the Kanawha District were last week may be obtained from the fact that production was only 168,030 tons—a drop of about 42,000 tons. The lack of cars was almost totally responsible for this decrease in production, the hours lost from car supply amounting to 1347. Total hours worked were 5388 and hours lost from labor shortage amounted to 410. The car supply this week shows no improvement and operators in this district are up in arms.

## Clarksburg, W. Va.

An interesting and well attended meeting of the Northern West Virginia Coal Operators' Association was held Tuesday, Aug. 13, at the Waldo Hotel. Coal men representing the Clarksburg Fairmont and east West Virginia fields were in attendance. Topics pertaining to car distribution, routing and increased production were before the meeting for discussion.

The executive committee of the association discussed routine matters pertaining to the affairs of the Association. F. J. Patton, secretary of the association, reported a full attendance of the members of the committee. At the conclusion of the business meeting, numbers of the visiting operators took advantage of the opportunity to visit some of the mines in the vicinity of the city. Automobile parties were made up and many of the local mines were inspected.

The evening session was featured by a banquet at the Waldo, when the local coal men, headed by "Uncle" Dan Howard, entertained the visiting operators. J. M. Orr acted as toastmaster and called on a number of the prominent operators present to discuss various phases of the coal situation. D. R. Dawson, district representative of the United States Fuel Administration, was the first speaker. He discussed the car supply problem and distribution of available cars. R. B. Isner, of Elkins, member of the executive committee, discussed the financial affairs of the association. He was followed by F. J. Patton, of Fairmont, secretary of the Association, who stated that there were from 500 to 600 operators in the northern West Virginia coal fields and it was the aim of the association to have a one hundred per cent membership.

Other speakers were Lloyd Bailey, representing the Pennsylvania-West Virginia Coal Company; "Uncle" Dan Howard, president of the operators' association, and Harry W. Sheets.

## Ottawa, Canada

An important statement impressing upon the public the urgent necessity of getting in supplies of soft coal immediately was made on Aug. 14 by C. A. Magrath, Canadian Fuel Controller. He declared that the seriousness of the situation did not seem to be appreciated, as evidenced by the fact that domestic coal is not being purchased in sufficient quantities, and he could not emphasize too strongly the danger of actual suffering in the cold months if action is not taken at once. He drew particular attention to the fact that the allotment for the Canadian West, as recently announced by Mr. Peterson, the Deputy Controller, was entirely contingent upon the coal being available in the United States. Since April the allotment of anthracite coal for Canada has been cut by one million tons, and the United States has restricted supplies all over that country.

The Western allotment of anthracite is only half the amount normally consumed, and this will be available provided it reaches the head of the Lakes, but even this is not an assured fact. As long as the war is on no guarantee can be given regarding anything in the matter of improved coal. Unnecessary hardship will result if the Western people do not follow the advice given that 50 per cent of soft coal must be in before any hard coal is supplied. "Western mines can produce and the railroads can deliver domestic fuel," continued the controller, "therefore I positively and absolutely refuse to be responsible this winter if people suffer."

In reference to complaints made as to excessive prices charged for coal in Winnipeg Controller Magrath said that he was prepared to take drastic action in any specific cases brought to his attention where the law had not been complied with.

## PENNSYLVANIA

### Anthracite

**Hazleton**—Two powerful electric pumps will be installed at the No. 5 colliery of the C. M. Dodson Coal Co. at Beaver Brook. The pumps will be placed in concrete beds and can be operated even if entirely flooded.

**Hazleton**—The Lehigh Valley Coal Co. is planning for increased stripping operations in the Tomhicken section. Negotiations have been completed with the township officials of Hazle Township providing for the changing of the course of one of the township roads, in order to facilitate the proposed work.

**Hazleton**—The Harleigh-Brookwood Coal Co., whose Harleigh mines were drowned out recently when Harleigh Creek broke through its bed into the underground workings, has made arrangements to divert the course of the stream, build a new channel for it and pump out the flooded gangways. The company, which is controlled by the Madeira, Hill & Co. interests, lost its \$200,000 breaker recently through fire, and the Lehigh Valley Coal Co. was preparing its tonnage for market when the place was filled up by the creek.

**Freeland**—The mining companies have been asked by the Federal authorities to state their material requirements for 1919 and six months of 1920. Shipments of nails, iron, and other mine and mill supplies are held up, and firms must depend on local jobbers at increased prices.

**Shamokin**—The first arrest under the Federal law, prohibiting agents from one industrial field inducing men to leave for another, was made on Aug. 13 by Federal officers when they jailed Peter Jalinski, an employment agent for West Virginia soft coal corporations. Jalinski, a former resident of Shamokin, came here and induced more than a score of miners and mine laborers to accompany him back to West Virginia upon promises of unusually high wages.

**Trevorton**—In keeping with its pledge to increase production, the Susquehanna Collieries Co. has reopened the Coal Run slope, which was abandoned here 30 years ago. Coal from this slope will be run underground for two miles to the Luke Fidler colliery, where it will be prepared for market.



**Eckley**—Miners showed their patriotic interest in coal production operating the Lehigh Valley Coal Co. colliery full-handed, even though the funerals of two of their comrades killed at work were in progress. The Lehigh Valley Coal Co. sent six miners to each service, paid their wages for the day and contributed \$150 to the victims' families, for expenses.

**Pottsville**—The Mammoth vein, so named because of its great thickness, being 40 ft. at some places, is to be stripped by the Darkwater Coal Co. Several million tons of coal will be easily accessible and will be had at little cost. The company has obtained the surface rights to a number of pieces of real estate, upon which dwellings, erected many years ago, will be vacated and razed, after which the stripping of the earth and clay will be begun. The coal will be prepared at one of the company's breakers nearby. James B. Neale, fuel advisor to Doctor Garfield, is head of the concern.

**Wilkes-Barre**—Announcement has been made by the Susquehanna Collieries Co. that the annual field day of the company generally held at Shamokin will not be held this year, but that instead contests in first air will be held by the various divisions. This will do away with any possibility of curtailment of output, but will allow the men to have their contests, which will be held in the evening.

**Sanford**—Notices received on Aug. 9 state that the Government has let down the bars against the importation of Mexicans for railroad and mining jobs. The measure is merely for temporary relief, but the men can be brought to help out in the anthracite region where the labor situation has hampered coal production and transportation considerably. Heretofore they could not be used in any collieries, except those in the Middle West, which mine lignite, a semi-bituminous grade.

**Millersburg**—With the present demands for coal it seems that the plan in vogue for years for coal-mining companies to use coal monuments in front of their offices is in discard for the present. A large piece of coal aggregating in weight about two tons, which has stood for many years in front of the offices of the Susquehanna Coal Co. has been removed to the company's breaker at Lykens and reduced to coal of marketable size. The company has recently given up its Millersburg office.

#### BITUMINOUS

**Irwin**—The Jamison Coal and Coke Co. is sinking a shaft on the Hile farm, adjoining Pleasant Unity, and will mine the Thaw estate coal—600 acres. On the Alexander Graham farm a new town is being built and a railroad spur is being built to the mines.

**Madera**—The Blue Run Coal Co., which began operation here on the William Semple and Bailey lands on June 14, is shipping coal. The operation employs 14 men. Coal is conveyed to Madera on a 5-ton Republic truck and is there loaded in box cars on the Pennsylvania R. R. As soon as the side track is extended to the mines the coal will be loaded from the tippie.

**Smithton**—E. W. Ruth, John Parchini and Bercon, Ben McLain and Paul Jullinal, four wagon-mine operators of Smithton, have had their mines closed down permanently by the Fuel Administration because they persisted in loading coal that contained rock, slate, sulphur, fireclay, shale and other impurities.

**Harmarville**—With the death of two men in the Allegheny General Hospital, Pittsburgh, the total death list due to the explosion at the mine of the Consumers' Mining Co. recently has been increased to eight.

#### VIRGINIA

**Coeburn**—The Twin City Coal Corporation, recently incorporated with a capital of \$90,000, has perfected its organization, and is planning for the immediate development of about 300 acres of coal properties. The works will have an initial capacity of about 150 tons daily. J. P. Lay is president.

#### WEST VIRGINIA

**Wyatt**—In connection with extensive improvement at the local plant of the Consolidated Coal Co., a large, new, two-story coal tippie is being constructed. It is said that when completed, this tippie will be one of the most modern in this section.

**Wheeling**—A total of about 4500 acres of coal land, ranging in price from \$110 to \$125 per acre, lying partly in Pennsylvania and partly in Brooke County, West Virginia, has been purchased by W. W. and

J. F. Luce, of Bellvernon, Penn., from J. A. Beall, of Pittsburgh. It is the intention of the purchasers to build branches from the Pennsylvania and the Wabash railroads, and more mines, in addition to those already in operation, will be opened.

**Charleston**—The mine formerly operated by the Little Queen Coal Co. at this place has been purchased and is now being operated by N. J. Wood, of the Dickinson Fuel Co., of Charleston.

**McComas**—A new mine is being operated by the American Coal Co. at this place, under the supervision of J. Tracy Walker, superintendent, 25 houses for miners also being under construction here. This company succeeded in increasing its July output 5000 tons over its June output.

#### ALABAMA

**Cullman**—M. W. Bush, Birmingham, and associates, have acquired approximately 16,000 acres of coal lands in the Bremen basin section of Cullman, and are planning for early development operations.

**Birmingham**—The New Castle Coal Co. is planning to rehabilitate its old Lehman mine at New Castle, and will construct a modern tippie and equipment for the handling of coal from the opening. A Ramsay rotary dump will be installed, which will necessitate the employment of only one man in the handling of the coal on the tippie. This labor-saving device is an invention of Erskine Ramsay, one of the best-known coal operators of the country, who represents Alabama in the directorate of the National Coal Association and is also a member of the executive committee of that organization.

#### KENTUCKY

**Hazard**—The Kenmont Coal Co. is at the present time making a new 6 ft. opening in the upper vein of coal and expects to increase its output to 20 cars a day.

**Lexington**—The White Ash Coal Co., recently incorporated, has purchased the lease of the Mike Branch Coal Co., in Lee County. The lease contains 900 acres with two openings and full mining equipment. The production now is four cars a week and the new company intends to increase that to 15 at once.

**Hawesville**—The Central Kentucky Block Coal and Mineral Co., recently incorporated with a capital of \$200,000, is planning for immediate work on the development of approximately 2000 acres of coal properties in the Hawesville district. It is proposed to install the necessary equipment to provide for a capacity of 500 tons daily. D. G. Duncan is secretary.

**Harlan**—Operators of Bell and Harlan Counties, and some operators in West Virginia, have been seriously handicapped by the failure of the Kentucky Utilities plants at Varilla, Ky., and the Pocket Field, of West Virginia, to furnish power to concerns buying power. About 75 of the mines along the Louisville & Nashville in Bell and Harlan Counties have been down on and off for three weeks or more due to failure of power, but the situation has grown worse. The power company claims failure of machinery concerns to make deliveries of repair parts, and has been asking aid of the Fuel Administration to help in getting things moving. Investigations have shown numerous delays in transportation, small parts being held by express companies unnecessarily, and some parts being practically unobtainable.

#### TENNESSEE

**Briceville**—The Cross Mountain Coal Co., which recently filed notice of an increase in its capital from \$400,000 to \$500,000, is now developing about 3000 acres of coal properties in the Briceville section, with daily output of approximately 600 tons.

#### INDIANA

**Washington**—The Superior Coal Co. has taken leases on 2500 acres of coal land in the Barr township oil field and will begin developing the second vein as soon as a mine can be opened. The vein is 8 ft. in thickness, as proven by numerous oil wells drilled in this section, and lies at a depth of from 250 to 300 ft. The company is also increasing the size of its mines at Cannelburg and Montgomery.

**Evansville**—The Commerce Coal Co. owned by capital in this city, is opening two new coal mines near Jacob's station, which will have a capacity production of 1000 tons of coal a day.

**Vincennes**—The eight mines of the Knox County Coal Operators' Association produced during July 323,887 tons of coal. The

largest previous record for a month was 293,499 tons. This result was accomplished in face of the fact that this particular field lost 350 hours, or more than 21 per cent. of the working time, on account of the car shortage.

#### ILLINOIS

**Carlyle**—The five mines of Clinto County produced 1,429,569 tons of coal in the fiscal year ending June 30. Two miners were killed and 15 injured.

**Lincoln**—Miners of this community who have gone into the service were honored at a service flag dedication Sunday, Aug. 1, at Latham Park. Frank Farrington, of Springfield, president of the United Mine Workers of Illinois, and L. B. Stringer, of Lincoln, were the speakers.

**Belleville**—St. Clair County produced in the fiscal year ending June 30, 7,916,674 tons of coal, an increase of 2,217,324 over the preceding year, according to the annual report of Thomas Wright, state mining inspector. This production involved the death of 17 miners, eight of whom were residents of Belleville. The county has 5800 miners, 53 shipping mines and 15 local mines. The latter produced 106,925 tons.

#### OHIO

**Toronto**—To show the enterprise of coal miners in supporting the Government in its urgent demand for fuel, it is interesting to note that one James Emory, of this place, minus both legs, has secured artificial limbs and is again engaged at his former occupation as a coal miner in one of the mines in the vicinity of Steubenville.

#### ALASKA

**Anchorage**—The Chickaloon Coal Co., which has been developing its property at the head of Cook Inlet for the past six months, expects to start shipping coal to the states next year. Walter Gompertz is superintendent of the property.

**Cordova**—Folcon Joslin, who recently obtained the first government coal land lease in the Bering coal field, states that development work is to start at once with the construction of a short railroad from the mine, which consists of 2400 acres between Shepard Creek and Lake Kushtaka, to the Copper River & Northwestern R. R., a distance of 65 miles. The government lease requires that \$250,000 in development work be undertaken. The company is known as the Bering River Coal Co. F. R. Van Campen is superintendent.

#### WASHINGTON

**Bellingham**—The railroad to the Cokedale Coal Co. property in Skagit County has been completed, as will be the new power station in a few days, and as soon as this is ready to operate the coal-cleaning machinery the mine will be ready to ship.

**Seattle**—The Federal Fuel Administration has permitted a raise in the price of Nanose coal to absorb a raise in price granted by the Canadian Fuel Administration to the mine operators of Vancouver Island. The lump coal is advanced 65c. per ton and nut and pea 25c. A similar raise in the price of South Wellington coal has also been permitted.

### Personals

**H. J. Kennard**, of Beyer, Penn., formerly superintendent of the Coal Run Mining Co., of Coal Run, Penn., has resigned to take charge of the Kurtz Coal Co. mines near Sangamon, Penn.

**W. B. Millgate**, who has been mining inspector in District No. 11, which includes Harrison and part of Jefferson County, Ohio, has resigned to become superintendent of the Fisher mine, between Dennison and Bowerston.

**Daniel E. Russell**, vice president of the Delaware, Lackawanna & Western R. R. Coal Dept., has resigned, on account of ill health.

**Clarence W. Watson**, chairman of the Board of Directors of the Consolidation Coal Co., Charleston, W. Va., and a lieutenant colonel in the Ordnance Department of the War Department has been nominated by the Democrats of West Virginia for the United States Senate.

**H. H. Elkins**, who has been superintendent of the Clarkson Coal Co.'s mines at Provident and Fairpoint, Ohio, resigned recently to accept the superintendency of the Occo Coal Co.'s mines between Bannock and

Lafferty. No one will be appointed to fill the place vacated by Mr. Elkins, but John Davis will continue to superintend No. 1 at Provident and John Norton No. 2 at Fairpoint.

**E. P. Dillon**, manager of the power division, New York office of the Westinghouse Electric and Manufacturing Co., has resigned to become general manager of the Research Corporation of New York. Mr. Dillon came to the Westinghouse company in 1909, having been previously connected with various mining and electrical companies in Colorado. In 1917 he was transferred to the New York office as manager of the railway and power division. For several years he was assistant to the manager of the railway and lighting department at East Pittsburgh, being in charge of power house and apparatus work. He was transferred to the New York office as manager of the railway and power divisions in 1917.

## New Incorporations

**Calla, Ky.**—The Progressive Coal Co. Capital, \$10,000, has filed amended articles increasing capital to \$30,000.

**Lennut, Ky.**—The No. 4 Superior Coal Co. Capital, \$10,000. Incorporated by C. S. Luttrell, M. Luttrell and J. W. Reedy.

**Harlan, Ky.**—The Shawnee Gas Coal Co. Capital, \$90,000. Incorporated by C. E. Ellison, E. N. Howard and W. W. Eager.

**Knoxville, Tenn.**—The Cross Mountain Coal Co. has filed an amended charter increasing its capital from \$400,000 to \$500,000.

**Central City, Ky.**—The McHenry Coal Co. Capital, \$210,000. J. H. Small, L. L. Stewart and A. J. Early. Incorporated to handle western Kentucky coal.

**Chattanooga, Tenn.**—The White Coal Co. has filed amended articles of incorporation, increasing its capital stock from \$10,000 to \$50,000, and plans changing name to the Christian Coal Company.

**Hartford, W. Va.**—The Mason Coal and Chemical Co. is planning to increase the present capacity of its plant. New mining cars will be installed and equipment purchased. A. D. Williams is president.

**Bellaire, Ohio.**—Klee Coal Co. has been incorporated with a capital of \$12,000 to mine and sell coal. The incorporators are William Goldsmith, John E. Klee, Marker Meager, Roscoe Klee, John Klee, Jr., Alva Klee and Howard Klee.

**Queen Shoals, W. Va.**—The Fire Block Coal Co. is planning for immediate work on the development of about 1500 acres of coal properties recently acquired in the Queen Shoals district. J. W. Miller and A. J. Saltzer, both of Charleston, head the company.

**Carbon Hill, Ala.**—The Rush Coal Co. has been organized and is planning for the immediate installation of machinery and equipment for the development of about 80 acres of coal properties in the Carbon Hill section. It is planned to have an initial capacity of about 35 tons daily. S. A. Threadgill is president and manager.

**Clarksburg, W. Va.**—A \$50,000 coal company to be known as the Catherine Coal Co. has been organized to mine coal in Eagle District, Harrison County, with offices in Clarksburg. The company was incorporated by Carl L. Hornor, Robert L. Hornor, Henry W. Thacker, Walter B. Hornor and Artie M. Hornor, all of this city.

**Louisville, Ky.**—Among the recently filed corporation articles were those of the Panhandle Coal Co., Jackson, Ky.; capital, \$60,000; incorporators, W. O. Bender, E. O. Bailey and E. I. Hawkins, Williams Oil, Gas and Coal Co., Red Bush; capital, \$26,000; Leo Williams, L. T. Williams and Alfred Williams, Powell Coal Co., Whitesburg; capital \$10,000; James P. Lewis, C. B. Sturgill and C. B. Powell, Laura Lee Coal Co., Williamsburg; capital, \$300; Isham Lawson, Nancy Lawson and Squire Rains.

## Industrial News

**Louisville, Ky.**—Notice of dissolution has been filed by the Dougherty & Lanning Coal Co., and its business has been taken over by the Harvey-Jellico Coal Co.

**Knoxville, Tenn.**—The Green Mountain Coal Co. has filed notice of an increase in its capitalization from \$400,000 to \$500,000, to provide for business extensions.

**Erie, Penn.**—The Burke Electric Co. announces that C. D. Miller is now manager of its Buffalo branch sales office at 509 Morgan Building, Pearl and Niagara Streets.

**Great Lakes, Ill.**—The United States Government, Navy Department, has awarded a contract to the Warner Construction Co., Chicago, Ill., for the construction of a new coal yard at the local naval station, in connection with other work, to cost \$69,228.

**Chicago, Ill.**—The Chicago Great Western R. R. has awarded a contract to the Railroad Water and Coal Handling Co., Chicago, Ill., for the construction of a new coaling station of 100 tons capacity at Kansas City, Mo. The structure will cost about \$20,000.

**Charleston, W. Va.**—Having increased its capital so as to be able to open a new mine, the Marsh Fork Coal Co., of which T. E. B. Siler, of this city, is president, is preparing to begin the shipment of coal from Jarrolds' Valley within the next two months.

**Charleston, W. Va.**—Owner of a large acreage of coal land in Clay County, the Lima Coal Co. of Lima, Ohio, has made application for a siding on the Coal & Coke Ry. at the mouth of Leatherwood Creek, near Hartland, with a view of developing its holdings.

**Charleston, W. Va.**—Equipment is being installed by the Big Bottom Coal Co. of which J. S. Cheyney is president, on its property on Campbells Creek, where in a few weeks the company will begin taking coal from the Lewiston seam. James Raisbeck is general manager.

**St. Louis, Mo.**—Walter A. Zelnicker Supply Co. has recently added to its sales force Henry Stroh. For the past ten years Mr. Stroh was connected with the Elliot Frog and Switch Co., prior to which time he was associated with the Republic Iron and Steel Co., both of East St. Louis.

**Concrete, Wash.**—The Superior Portland Cement Co. has started work removing its oil burners preparatory to installing coal burners, which last year were taken out for the crude oil apparatus. This is only one of the large Washington manufacturers who were compelled to make such a change as a result of the scarcity of oil.

**Salt Lake, Utah.**—With a membership of more than 150, representing every section of the state, the Retail Coal Dealers' Association of Utah was organized recently at the Newhouse hotel. Elias S. Woodruff, of Salt Lake, was elected president, John Farr, of Ogden, vice president, and S. L. Billings, of Salt Lake, temporary secretary and treasurer.

**Charleston, W. Va.**—The Gauley Coal Co. is installing a complete new unit to its power plant at Greendale at an estimated cost of \$20,000. In addition to the installation of motors and machines in the mine, E. G. Beddison, the superintendent in charge, is seeking a new or good second-hand Goodman shortwall mining machine and one 8- or 10-ton haulage motor.

**Louisville, Ky.**—Wiley B. Bryan, fuel administrator for Kentucky, recently issued an order which provides that no operator, licensed distributor or retail dealer shall sell, ship or distribute any coal for domestic purposes to any person having access to an adequate and available supply of wood, except by permission of a member of the fuel committee for the county where the delivery of such coal is to be made.

**Louisville, Ky.**—The Harlan Coal Co. has filed suit in the Circuit Court against the King Coal Co. for \$5000 damages, alleging a breach of contract in refusing to furnish its output of coal to the Harlan company, and it further asks an injunction to prevent the defendant from selling or shipping coal to any other agents or persons during the life of the contract made Oct. 20, 1917, to last until after the war is over. The plaintiff charges that the defendant refused to accept orders sent to it.

**Providence, Ky.**—A number of citizens of this city have formed a company for the development of coal lands, under the firm name of the Montgomery Mining and Development Co., and have filed articles of incorporation. The company has purchased the mine and equipment of Jesse Brantley for \$2000 and has already started work. It is the intention of the company to put a number of improvements in the near future. James F. Parker has been made general manager of the company.

**San Francisco, Cal.**—The following are the coal imports into this port for the first six months of the present year as compared with last year: From foreign ports, 75,720 tons 1918, 138,281 tons 1917; from domestic

ports, 61,417 tons in 1918, 90,164 tons for the six months of 1917, or a grand total of 137,137 tons for the six months of the present year as compared to 228,445 tons for the same period last year. Coke receipts by rail for the same period were 1710 tons and 2405 tons respectively.

**Toledo, Ohio.**—Activity at the docks of the lower lake ports still continues, stimulated by the lake shipping priority order recently issued. During the week ending Aug. 10 the Hocking Valley at its Toledo docks loaded 169,928 tons as compared with 164,602 tons the previous week, making a total of 2,281,986 tons for the season. During the same week the Toledo & Ohio Central loaded 78,000 tons as compared with 73,000 tons during the previous week, a total of 1,028,000 for the season.

**Cleveland, Ohio.**—The Chicago Pneumatic Tool Co. announces that contract has been let and work started on the erection of an up-to-date addition to its Cleveland plant, which is planned to double the present output. It is expected that work will be completed on the building itself about Nov. 1. The necessary equipment has been ordered and it is believed will be delivered and ready for installation by the time the building is completed, so that the additional production contemplated will be available soon thereafter.

**St. Louis, Mo.**—The St. Clair Coal and Mining Co., which supplied the city with coal last year, has been awarded a renewal of the contract at the same price as last year—\$2.30 at the mine—on all preparations except screenings, which are to be furnished at \$2.05. The contract, which runs not to exceed 13 months from Sept. 1, provides for fueling all the power plants of the city. The freight from the company's mines near Belleville is 95c. per ton and the delivery cost is 75c. per ton. The requirements are about 130,000 tons.

**Cincinnati, Ohio.**—The Central Frog and Switch Co. was recently organized with George Ashton as president and E. R. Heitzman as secretary and treasurer. Both men were formerly associated with the Cincinnati Frog and Switch Co., Mr. Ashton serving it in the capacity of vice president and chief engineer and Mr. Heitzman as secretary and treasurer. Mr. Ashton has been affiliated with the frog and switch business for 25 years. The new company is erecting a large plant along the Norfolk & Western tracks in the Hyde Park section of the city.

**Columbus, Ohio.**—A. W. Kuhns, who has been sales manager in charge of the Columbus office of the Peacock Coal Co., has resigned and has purchased an interest in the W. A. Woods Coal Co., of Cleveland, which has established a Columbus office with Mr. Kuhns in charge, as treasurer of the company. The Columbus office will be located in the Huntington Bank Building. It will job all Ohio mined coals. At the same time the Columbus office of the Peacock Coal Co. has been discontinued, as the product of the company has been sold for more than a year in the future.

**St. Louis, Mo.**—An agreement has been reached between Regional Director Bush and city officials for the use of the municipal free bridge by the government-controlled railroads. The Government will determine what rentals are to be paid by the railroads to the city for using the bridge and whether they will be permitted to continue charging the 20c. a ton differential on coal. Bush plans to have the Government expend between \$250,000 and \$300,000 in making connections with the bridge approaches on both sides of the river. It is intimated that he may also recommend a more elaborate system of approaches which will cost a great deal more.

**Columbus, Ohio.**—Ohio operators have been asked by the mine supply and equipment department of the production division of the Federal Fuel Administration to make up their budget for materials and supplies that will be needed in their mines during the year 1919. It is pointed out that this is to be done in order to facilitate the filling of the orders. Efforts were made as early as June 21 to gather this information through the National Coal Association, but the results were disappointing and now the work is to be done more systematically. Operators are urged to comply with the request at once in order to keep up the coal production to the highest possible point. Detailed instructions are given for filling out blanks sent by the Fuel Administration to the operators. Under a recent ruling of the Priorities Division of the War Industries Board an Automatic Priority in Class A-6 is granted on all manufactures of materials, equipment and supplies for the operation and maintenance of coke-oven plants and mines employed in the production of fuels.



# MARKET DEPARTMENT

## Weekly Review

*Production Decreases While Demands Increase—Bituminous Coal 14,500,000 Net Tons Behind Schedule—Car Shortage Again to the Fore—Anthracite Production Keeps Up Well—Lake Shipments a Cause for Disappointment*

IN the face of ever-increasing demands for bituminous coal, production recedes steadily week by week from the 13,286,000 net tons reported in the record-breaking week ended July 13. Estimates made at the beginning of the coal year for the tonnage of fuel necessary for essential uses have proved to be too low, the latest revised figures showing that every possible effort will have to be made by the coal-mining industry if the war program is not to suffer a setback. The requirements for the Navy, for instance, were originally fixed at 3,500,000 net tons for the year. It now is estimated that Uncle Sam will need at least 8,000,000 net tons for his vessels before the end of 1919.

An idea of how fast the Navy is consuming fuel may be had from the fact that the demand in July from this source had risen to a 6,000,000-ton-a-year basis. The shipyards, too, are speeding up production to such an extent that the 10,000,000 net tons considered a liberal allowance for the Shipping Board on Apr. 1 have been increased by 3,000,000 tons. Another phenomenal increase is in the demand for bunker fuel. At the beginning of the coal year 13,500,000 tons were assigned for this purpose, with the thought that this amount would prove adequate. The estimate has now risen to 21,000,000 tons. When to the foregoing figures is added the coal needed by plants that have been enlarged, and the additional fuel required to keep a large percentage of industries operating on a 24-hour basis, it can be seen that the problem confronting the soft-coal mines is of no mean proportions.

For the week ended Aug. 10 (the latest statistics available), the output of bituminous coal is estimated at 12,274,000 net tons. This means an average production of 2,046,000 net tons a day for this period, which is 54,000 net tons below the daily output established as a minimum. To emphasize the seriousness of the situation still further—the soft-coal mines are now 14,500,000 net tons behind schedule, and it is a foregone conclusion that they will never catch up.

The causes for the fall in output seem to be divided between car shortage and labor unrest, with the greater part of the blame attaching to the former. Record production can only be achieved when the railroads manage

to keep an adequate number of empty coal cars moving to the mines and the transportation of loaded cars is speeded up. This statement is substantiated by the fact that the peaks in the coal production chart result when the railroads operate at maximum efficiency. Operations in the Pittsburgh district are short of 200 cars a day, and on Aug. 16 many of the mines in that region were at a standstill for want of cars. In the Kanawha and Coal River districts of West Virginia car shortage was responsible for the loss of 1347 productive hours during the week ended Aug. 10. In Alabama, too, the lack of cars caused a decided decrease in output.

Despite reduced labor forces, the output of anthracite coal continues to keep well ahead of the quantity mined last year. Hard coal shipments during the week ended Aug. 10 totaled 2,051,933 net tons, a decrease of 6.4 per cent. compared with the week preceding. The total output of anthracite coal in July amounted to 7,084,775 tons, an amount exceeded only twice before; but what is even of more importance, virtually the entire tonnage of anthracite mined for the first quarter of the coal year—April to July—is in the hands of the consumer.

### COAL PRODUCTION

The production of bituminous coal during the week of Aug. 10 decreased 278,000 net tons, of 2.2 per cent. and recorded the fourth successive week of decreased output. The decrease in production during this period was equivalent to 1,000,000 net tons, or 7.6 per cent., below the record week of July 13, when production reached 13,286,000 net tons, and makes necessary an output of 14,500,000 net tons during the balance of the summer months to make up the deficit for the coal year to date. The output during the week of Aug. 10 (including lignite and coal coked) is estimated at 12,274,000 net tons as against 12,552,000 net tons during the week of Aug. 3 and 10,636,000 net tons during the current week of 1917. The average production per working day during the week of Aug. 10 is estimated at 2,046,000 net tons as compared with 2,092,000 net tons during the week preceding and 1,773,000 net tons during the week of Aug. 10, 1917. The daily average during the current week fell 54,000 net tons, or 2.6 per cent. behind the daily summer requirements established by the United States Fuel Administration.

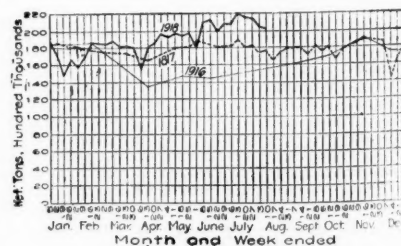
Shipments during the past week decreased from all districts with the excep-

Nothing should be tolerated that will interfere with anthracite production if the public is to be supplied with coal. There is evidence that Hun propaganda is rife in the hard-coal regions—in the shape of both covert and open acts calculated to create discord in the labor ranks. The mining force should by every possible means be maintained at its present figure, whether against the draft or other depleting agencies.

Shipments of soft coal to the lakes grow more and more disappointing. It is feared that the Northwest will not get over 25,000,000 tons, instead of the 28,000,000 aimed at. The first eleven days of August saw lake shipments of bituminous—exclusive of vessel fuel—only 1,535,996 tons. The Fuel Administration schedule calls for 4,900,000 tons. July closed 1,000,000 tons behind, and it appears that August will add about 1,250,000 tons to this deficit. For the week ended Aug. 17 the estimate of shipments to the Northwest is 1,020,000 tons. The Pittsburgh district has not been able to respond to the 1600-car-a-day order, due to the unsatisfactory car supply referred to earlier in this review and a marked shortage in motive power.

per cent. Material decreases during the week were as follows: Central Pennsylvania, 3.2 per cent.; western Pennsylvania, 4.8 per cent.; Cumberland-Piedmont and Somerset, 8.4 per cent.; Fairmont, 9.3 per cent.; Ohio, 6.9 per cent., and Tennessee and Kentucky, 8.8 per cent.

Anthracite production during the week of August 10 is estimated at 2,051,933 net tons, a decrease compared with the week preceding of 6.4 per cent. Shipments during the same week totaled to 36,870 carloads, decreasing 7 per cent. Total production during the coal year to date is estimated at 37,709,447 net tons, an increase over the same period of last year of 2.1 per cent.



### CARLOADS OF COAL ORIGINATING ON PRINCIPAL COAL-CARRYING ROADS

	July 20	July 27	Aug. 3	Aug. 10
Bituminous shipments, 123 roads	229,770	228,231	220,940*	215,996†
Anthracite shipments, 9 roads	40,664	40,942	39,632	36,867†

\* Revised from last report. † Subject to revision.

tion of southwest Virginia, Alabama and the district including Illinois, Indiana and western Kentucky. The increase from southwest Virginia amounted to 24.3 per cent., from Alabama 11.4 per cent. and from Illinois, Indiana and western Kentucky 2.3

**Beehive Coke**—Production of beehive coke in the United States during the week ended Aug. 10 is estimated at 602,000 net tons, a decrease compared with the week preceding of 12,000 net tons or less than 2 per cent. The average production per working day is estimated at 10,000 net tons as against 102,000 net tons during the week ended Aug. 3. Operators in the Connellsville, Greensburg and Latrobe districts of Pennsylvania report production of beehive coke during the week of Aug. 10 at 358,986 net tons, and the operation of their plants at 70.3 per cent. of their present capacity as against 76.1 per cent. during the week preceding. Production was limited during the week by yard labor shortage, slight mine disability and other causes not reported. The same operators produced 202,150 net tons of coal.

**Byproduct Coke**—Operating conditions in the byproduct coke industry in the United States improved slightly during the week ended Aug. 3, the plants operating at 91.5 per cent. of their present capacity as compared with 90.6 per cent. during the week preceding. Material gains occurred during the week in Kentucky, Maryland, Minnesota, New York and Ohio. Improvement was brought about in Kentucky and Maryland by repaired plants, in Minnesota by better market conditions and in New York by better labor conditions. Tennessee was the one state reporting a decrease in production. The week of Aug. 3 was the first time the operators of the country reported a market for all coke produced, the operators in Minnesota, the lone state reporting loss of time due to that factor during the past few months, finding a market for their entire production.

#### BUSINESS OPINIONS

**Marshall Field & Co.**—The feature of the wholesale dry goods business for the week was the large business done in domestic cottons. Road sales for immediate delivery showed a good increase over the corresponding week of 1917. Lines for spring of 1919 have not yet been offered. Customers were in the market in fewer numbers than last year. Collections continue good.

**Bradstreet's**—War orders dominate every line, and supplies for ordinary purposes are greatly curtailed. Conservatism in regular channels, whether flowing from damage to the corn crop in the southwest, from lessened demand for men's goods, from belief that prices have reached zenith point, or from restrictions placed upon so-called non-essentials, is thereby almost overshadowed. Indeed, the great majority of wholesale trade reports testify to continued good demand ruling, largely, however, on government account, exceptions to this being noted in dispatches from districts of the southwest where both cotton and corn have been hurt by drought. Retail trade is fair to good for a midsummer period, and the same is true of collections, except from the southwest.

**American Wool and Cotton Reporter**—That there will be enough cotton the coming year is undoubted, at least in some quarters, and it is felt that the market will later be bearish. It is predicted that those who are relying on increased facilities for shipment will be mistaken. Other factors will also come into play later. Mills are not buying cotton at the present time because they are not in the market to make goods. They are waiting for prices to be fixed. Basic prices have been announced, but there seems more or less stagnation because other prices on goods in general have not been fixed. The woolen goods market is decidedly mixed. Figures show that there ought to be much wool available for the production of ordinary fabrics, but facts or intimations given out appear to show that at least no large supply can be expected, and some believe that there will be no apportionment at all. It is not surprising, therefore, that some economical producers could make a great effort to secure Government orders up to their capacity. The question of importance is, however, what other producers will be able to do in order to keep machinery in operation.

### Atlantic Seaboard

#### BOSTON

Further conferences in Washington show the strength of New England's case. Rumored that no curtailment is to be ordered. Great need of volume shipments continuously until Nov. 1 seems better understood. From Hampton Roads and from central Pennsylvania shipments continue on the July basis, with occasional increase for short periods. Box cars continue to come forward from the central Pennsylvania dis-

trict, but already there are signs of this equipment starting west for grain. By Sept. 15 the number of box cars available will be much reduced. Steamers at Boston and Portland being unloaded more promptly. Delays begin to appear at Hampton Roads and at Baltimore. Volume of high priced coal by water has a marked effect upon buyers. Meanwhile, Government requirements increase by leaps and bounds. Slack demand for anthracite steam sizes. Reading barges may occasionally load at Port Reading.

**Bituminous**—Pursuant to earlier conferences in Washington Mr. Storow and a few members of his staff were again at the capital last week, this time to show by actual figures that New England is not as well stocked as "everybody knows." It takes most persistent argument and conclusive figures to make others who are unfamiliar with conditions in New England to understand why what would be a sufficient reserve for industries in eastern Pennsylvania would by no means be adequate for this territory to enter the winter months on any safe basis. It appears that now this phase of our situation is looked upon more intelligently and the great need of building up reserves in New England is better recognized. Unless our railroads and other essentials can accumulate the next 60 days at least to the extent they did last year there is ground for much anxiety. When, from weekly reports, it is seen that any plant has more than a reasonable supply, action is at once taken to divert at the gateways all coal originally consigned to that plant all-rail, and when distributors of water coal submit the disposition of cargoes the names of such consignees are taken from the list. In this way deliveries are carefully supervised, although it is by no means an easy matter. The difficulty is that every buyer is reaching out in every direction to get coal if not at one price then at another, and to have anything approaching scientific distribution would require a small army of inspectors and others with authority to act.

Weekly deliveries from the central Pennsylvania district are now from 3800 to 4000 cars, but so far as figures can be had the movement has been at no time in excess of 4000 cars. The program on June 12 was for 4500 cars weekly and it does no harm occasionally to remind Washington that actual shipments on that order have averaged much less than 80 per cent. In other words, August receipts at the gateways continue about on the July basis, or only for brief periods is there any noticeable increase. All box cars on the Pennsylvania railroad from the central Pennsylvania district are still considered free coal for distribution by the Fuel Administration. At times since the order went into full effect on July 22 the movement of box cars has reached 600 per week for New England. A better demand for coal in this equipment is now forthcoming from New York and eastern Pennsylvania and from time to time the number of cars for New England is somewhat reduced. Continued shipments of this kind can hardly be relied upon for more than a few weeks because it will soon be necessary for the railroads to send box cars west for grain. Already there are signs of this westward movement and it is freely predicted that by Sept. 15 there will be much less opportunity to get wagon coal. The more farsighted of the small consumers are gladly taking advantage of present opportunity and every car that comes forward helps that much the general New England situation.

Dumping at Hampton Roads continues also on about the July basis, although receipts at the piers have been more irregular. Steamers shifted from Baltimore to Hampton Roads have met with delays and there has been a lot of apprehension among New England buyers over demurrage charges that are likely to accrue. The lack of berth room at Boston and Portland that was the cause of detention at this end has now been cleared up by a better disposition of steamers as they arrive and from now on the delay is more likely to be at the loading piers. In this connection, the Shipping Board is now issuing semi-weekly announcements of port performance. Norfolk and Newport News, for the half week ending Aug. 12, had the best record for loading, 12 ships having been loaded and trimmed at an average of 34 hours and 42 minutes in port. Counting 21 ships unloading at Boston during the same period the average time in port was 116 hours and 30 minutes. It is expected that figures next week will show a material reduction in time required for unloading at this end.

Detention at Baltimore has also given cause for anxiety, especially during the past week. Several cases of heavy demurrage have followed and as this becomes known in the trade it grows more and more difficult to distribute the high-priced

coal. Inland buyers who have had demurrage items as high as \$2.50 on their coal invoices are getting increasingly shy of committing themselves on coal yet to arrive. With a few weeks' supply on hand they are more inclined to wait developments and take their chance of getting rail shipments or later by water when they think there will not be so great a risk of demurrage. This is unfortunate, for it is of greatest importance that every New England buyer take on coal today as fast as it can be shipped.

**Anthracite**—Receipts both by rail and water continue about as last reported. Water shipments are still seriously handicapped by submarine activities and movement is far short of 1917. It is rumored that Reading barges will occasionally load at Port Reading, N. J., rather than at Philadelphia, this being a part of a general effort to increase shipments to New England.

Broken and pea are the sizes in best supply and of late practically every cargo has had a proportion of these coals. Stove and chestnut are hard to get and apparently retailers will have to keep on accepting cargoes as they come. No shipper will today make any promises as to the assortment of sizes.

Notwithstanding all the campaign this year to induce steam users to take liberal tonnages of steam sizes of anthracite, the demand has notably fallen off. It is only natural that where consumers have been equipped to burn only bituminous they will confine their purchases to that rather than make further experiments with the different sizes of buckwheat. There is certain to be a renewed demand, however, when it is found that bituminous shipments are not forthcoming in anything like present volume.

#### NEW YORK

**Anthracite situation in better shape and coal moving easier.** Dealers complain of preparation. Church day curtails production. Long Island dealers insist upon larger shipments if famine is to be averted. Demand for bituminous equals production. More changes in tidewater pools. Navy Department wants more coal. Towing charges under investigation.

**Anthracite**—The situation is in better shape and the trade has taken on a brighter appearance. Coal is moving easier to this market and there is a better feeling all around. Even the public seems to be in a better humor, and it has been assured that everybody will have some coal before winter sets in. Reports show that for the week ended Aug. 16, 7069 cars of anthracite were dumped at the local docks as against 7004 cars dumped the week previous, a gain of 65 cars.

The retail dealers in this city are not all of the same opinion regarding distribution. Some of them believe that larger shipments of the domestic sizes should be permitted to come here so that they would be able to clean up on orders that have been on their books since April.

The producers have figured that nearly 9,000,000 persons have been provided with anthracite since Apr. 1 and that at the tidewater docks there was less than 113,000 tons of coal on the first of the month, which shows, they claim, that consumers are better provided for than ever before in August.

While conditions have improved in Greater New York the dealers in some of the small towns on Long Island claim that unless immediate action is taken whereby they can secure coal there will be many heatless homes this winter. The dealers complain of lack of shipments and say that they are not being given any increase over their 1916 tonnage, notwithstanding the increase in population.

The domestic coals, with the exception of egg, are moving easier and shippers report buckwheat No. 1 in better supply. Rice is in good demand while barley and culm are easy.

Local retail dealers are kept busy making deliveries but are handicapped by a shortage of help and the apparent indifference of their employees to work.

Current quotations, per gross tons f.o.b., tidewater, at the lower ports, are as follows:

	Circular	Individual	Circular	Individual
Broken..	\$6.75	\$7.50	Buck...	5.10
Egg....	6.35	7.10	Rice....	4.65
Stove...	6.60	7.35	Barley..	4.15
Chestnut	6.70	7.45	Boiler..	4.60
Pea....	\$5.20	\$5.95		

Quotations for domestic coals at the upper ports are generally 5c. higher on account of the difference in freight rates. Prices for buckwheat, rice, barley and boiler are not fixed by the Government.

**Bituminous**—The demand continues brisk and with production failing to show any



substantial increase there is no surplus being accumulated at the docks. Some large consumers are more fortunate, however, and have been able to store small stocks to carry them over a few weeks or a month. With demands for more coal increasing owing to added industries, it is becoming more apparent that there is going to be a serious situation next winter unless something is done to increase production. Operators believe that there will be no further depletion in labor now that President Wilson has spoken and with an improvement in car supply they will be in a better position to maintain production.

There has been a further classification in Tidewater pools. Pools Nos. 13 and 29 have been eliminated and combined with Pool No. 18. Other changes are in contemplation. Many of the mines are being examined by the Navy Department, and this it is believed will result in many changes in the make-up of the pools.

Bunkering fuel is not in large supply in all of the pools. Some slight delay in loading is reported due to the failure of sufficient coal in the individual pool from which a vessel is being coaled, the rules providing that the coals from the various bunker pools must not be mixed. Owing to the increased shipping and the demand for bunker coals, it is believed that when the new classifications are announced by Tidewater Coal Exchange that many of the coals now classified as commercial coals will be found in the bunker coal list.

There was a decrease of 350 cars in the dumpings for the week ended Aug. 16, 6413 cars having been dumped as against 6763 cars the previous week. This market continues to be without free coals, practically all the coal coming here being spoken for before shipment.

Current quotations, based on Government prices at the mines, net ton, f.o.b. tidewater, at the lower ports, are as follows:

	Mine Gross	F. o. b. N. Y. Gross
Central Pennsylvania:		
Mine-Run, prepared or slack.....	\$3.30	\$5.45
Upper Potomac, Cumberland, and Piedmont Fields:		
Run-of-Mine.....	3.08	5.23
Prepared.....	3.36	5.51
Slack.....	2.80	4.95

Quotations at the upper ports are 5c. higher.

#### PHILADELPHIA

Anthracite continues quiet, but demand heavy. Some improvement in shipments. New conservation measures. Fall prices cause anxiety on part of dealers. Stove and chestnut in strongest demand. Retail labor situation serious. Steam coals all taken. Some culm activity. Bituminous shipments in fair volume. Car supply complaint continues.

**Anthracite**—The week has been the quietest for some time. Probably the most encouraging sign is that shipments actually do improve in a small measure, and this has been the trend for several weeks now; as a consequence the trade continues to display a measure of optimism. While it is claimed the dealers will have some trouble satisfying their trade all fall, yet there are those who profess to believe that they will be in even better position by the time cold weather arrives. They further express the opinion that the troubles of last winter will not be repeated. The announcement of the local administrator that the dealers had stored 817,988 tons in the cellars of their customers up to Aug. 1 is encouraging. This tonnage is far in excess of that delivered up to the same period last year. Deliveries so far this month have been heavy and have considerably reduced the 833,157 tons reported by Mr. Lewis' office as being undelivered up to Aug. 1. In the suburbs the improved conditions are also becoming noticeable, as more than one dealer has got his deliveries in such shape that they are actually putting some coal into the cellars of new customers, a situation that none of them expected until late in the fall.

Stove and chestnut continue to be the short sizes locally and for some reason the former particularly so. Egg is short in the suburban sections, but comparatively easy in the city yards. A number of dealers are glad to see small stocks of pea accumulating. Buckwheat is noticeably easier, a situation that is not likely to continue beyond the present month.

The dealers appear to be as much worried over the labor situation as they are over the lack of coal. Retailers with heavy tonnages due them during the balance of the current coal year express the fear that in order to handle it they will be compelled to pay prohibitive prices for help. Several interviewed say they dare not reprimand employees who fail to report for work, let

alone deduct a day's pay from those who have an increasing habit of taking a day off. That the situation will be critical before winter is admitted by all.

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Car shortages more pronounced. Efforts to speed production. Practically no market transactions.

R. W. Gardiner, who has been distributor of Pittsburgh district coal, has been made production manager of the district and has appointed William McPherson his chief assistant. A series of meetings is planned, with prominent speakers, to outline the plans for speeding production. Mines will be grouped and miners and their families asked to attend.

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Byproduct ovens are not receiving as heavy shipments as formerly, in a number of instances. Such shipments have been reduced, however, only when there was accumulation, the aim being still to furnish enough to maintain operations. The byproduct ovens want a large accumulation against the winter, as it is of prime importance that they have full production, not only because the coke is needed to make pig iron but because the byproducts are essential for the manufacture of explosives. Six months ago the Government showed much more interest in the latter than in the former, but its interest in the former has now become equally great.

Occasional allocations of coal are being made, but with the steady growth of the preference list such operations are not nearly as common as formerly. Open market transactions are rare and altogether exceptional, there being no regular movement. The market remains quotable at the set limits: Slack, \$2.10; mine-run, \$2.35; screened, \$2.65, per net ton at mine, Pittsburgh district, with 15c. additional allowed to be charged by brokers.

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and 1100 tons for Marinette. Freight rates remain at 48c. to Duluth, 50c. to Manitowoc, 55c. to Milwaukee, 60-65c. to Chicago and \$1 to Marinette.

#### CLEVELAND

Definite orders have been issued to coal operators not to make further shipments to industrial consumers known to have fair-sized stock piles on hand. Circulars listing concerns able to run until Oct. 1 on their present stocks are being issued. The lake trade continues to fall behind the schedule, and it is feared that the end of August will see the Northwest with more than 2,000,000 fewer tons of bituminous on the docks than was planned. To provide larger tonnages for the Northwest, retail dealers here are being cut to 15 and 20 per cent. of the requirements.

**Bituminous**—The outlook both as regards industrial and domestic trade has taken a decided slump in the past week. Circulars are being issued by D. F. Hurd, regional director for the United States Fuel Administration, bearing the names of industrial concerns known to have ample stocks on hand. In some instances operators are directed not to ship certain concerns any more coal until after Oct. 1—in a few instances shipments have been cut off only until Sept. 10.

Investigators for the administration are said to have gone into the yards of practically every concern in Cleveland and northern Ohio and photographed the stock piles. One large steel works in Cleveland is said to have between 180,000 and 190,000 tons of bituminous on hand, a 60-day supply at the least. Another northern Ohio iron and steel interest is said to have been found with more than 300,000 tons of bituminous stored. These instances have led the administration to feel that concerns should be compelled to use their stock piles in order to permit a greater diversion of coal to the Northwest while navigation on the Great Lakes is still possible.

Domestic users are informed that once the lake season ends their supplies will become adequate. One result of this situation has been to augment the domestic demand for coke. Complaints against the car shortage on the Pennsylvania R. R. in the No. 8 district have resulted in the arrival of a fuel administration investigator here. Car supply on the Pennsylvania for the first 10 days of August was only 53 per cent. of normal. The road, it has been ascertained, has been according mines shipping railroad fuel a 100 per cent. supply, while other mines were forced to take the leaveings. Pennsylvania officials here claim ignorance of any order that car supply is to be distributed evenly, whether or not the mine is putting out railroad fuel, and Pennsylvania officials at Pittsburgh will be called upon to explain, it is said. Considerable complaint is arising, too, in regard to irregular shipments.

Many concerns report they get no cars one day and twice the normal number the next. As a result, the unloading force is disrupted, and much demurrage must be paid. This tends to decrease car efficiency, which is an even more serious condition. According to the report of the secretary of the Pittsburgh Vein Association of Ohio, operators who belong to the association shipped 6277 cars in the week ended Aug. 7, of which 3617 went to the lake trade, 1235 to railroads, 1062 to Ohio, 261 to Michigan and Indiana and 102 to Canada. The 3617 carloads that went to the lake trade are little more than half of the 7200 cars required each week under the order calling for 1200 cars a day from the Pittsburgh district for the Northwest. Car supply has been good on every road except the Pennsylvania. Power supplies are failing mines in southern Ohio and serious trouble is feared. The corporation that furnishes electricity to many of the mines in the No. 8 district is said to be encountering difficulties. The shipments for the week ended Aug. 7 were made as follows: Baltimore & Ohio, 3044 cars; Pennsylvania, 1621; Wheeling & Lake Erie, 1474; and New York Central, 138.

**Lake Trade**—Shipments of bituminous grow more and more disappointing. Many operators fear the Northwest will not get over 25,000,000 tons, instead of the 28,000,000 aimed at. The first 11 days of August saw lake shipments of bituminous—exclusive of vessel fuel—only 1,535,996 tons. The Fuel Administration's schedule for August calls for 4,900,000 tons. July closed 1,000,000 tons behind, and it appears that August will add about 1,250,000 tons to this deficit. For the week ended Aug. 17 the estimate of shipments to the Northwest is 1,020,000 tons. The Pittsburgh district has not responded to the 1600-cars-a-day order by far.

#### DETROIT

**Shortage of domestic coal supply remains an alarming factor of the market. Fuel Administration affords little relief. Lake movement gains.**

**Bituminous**—Facing a contingency which may lead to serious hindering of production on war contracts by departure of workers from Detroit, local coal jobbers and representatives of large industrial plants are endeavoring—so far with little success—to increase the present movement of domestic coal into the city and obtain an addition to the inadequate allotment of 601,000 tons of anthracite allowed Detroit.

Headed by J. J. Crowley, president of the Detroit Board of Commerce, and accompanied by W. K. Prudden, Michigan Fuel Administrator, a committee of Detroit manufacturers representing concerns engaged on large contracts for the Government, spent most of last week in Washington appealing to the Fuel Administration, the War Industries Board and the Director of Railroads for action to relieve the situation.

The committee appears to have made little progress beyond receiving a promise from the Fuel Administration that a campaign would be opened at once to increase the movement to Detroit of bituminous coal suitable for domestic use. It was informed no addition to the city's allotment of anthracite could be made.

Bituminous coal now coming into Detroit in fair volume, consists for the greater part of mine-run, which is not adapted to use in the hot-air furnace heating plants and base-burner stoves, which predominate in the homes of the city. While the present supply of bituminous provides adequately for present needs of steam plants, little surplus is available for reserves.

**Anthracite**—No improvement in movement of anthracite has developed. Shipments received on some days fall below 20 cars, while the average is probably below 30 cars daily for the month. Manufacturers say many of their employees will go to cities where they can be assured fuel for winter needs unless the city's allotment of anthracite is increased and a larger movement stimulated.

**Lake Trade**—Coal is moving rather more freely to lake loading docks and the shipments to ports at the head of the lakes have been attaining a higher volume in August than in July, though many carriers are still making the upbound trip without cargo. Shipments have not yet reached the magnitude necessary to realize the shippers' program of 4,900,000 tons for the month.

#### COLUMBUS

The lake trade is now the principal activity in the coal industry. Some coal is being diverted for domestic and steam purposes, but the amount is not large. Production is fairly good.

The principal feature of the coal trade in Ohio, is the activity in the lake traffic. Under orders from the Federal Fuel Administration a large tonnage is being rushed to the Northwest and every effort is being made to fill the requirements in that section earlier than usual. It is hoped that the requirements can be filled by Oct. 1 after which the product of Ohio and West Virginia mines can be diverted to domestic and steam uses. The vessel movement is active, and little time is lost in handling either coal or ore. Reports show that the coal is being moved off the docks of the upper ports, thus avoiding congestion.

The steam trade is rather quiet, although a certain amount of screenings is being diverted to steam business, which helps to relieve the situation. Most of the larger steam users had succeeded in laying in a supply of coal to last for some time and thus are not suffering. Smaller steam users have sufficient fuel for the present. Most of the public service institutions have made arrangements for their coal supply.

The domestic trade is also quiet, although dealers are still busy making deliveries. Surplus stocks are rapidly being depleted. Practically no Pocahontas is now available and only a limited amount of West Virginia grades is arriving. In fact it is only the smaller mines that have no lake connections that are supplying the domestic trade. Retail prices are firm at the levels which have prevailed for some time. Dealers are beginning to get anxious and are making inquiries if the priority order may soon be modified.

Production has been increased slightly with a better car supply and more plentiful labor. Patriotic meetings held in many mining sections are having their effect in increasing the output. Lack of motive power on some of the railroads caused a temporary car shortage, but steps are being taken to relieve that situation. On the whole the output has been between 75 and

85 per cent. in all of the producing fields of the state.

Prices on short tons f.o.b. mines are as follows:

	Hocking Thin Vein	Hocking Thick Vein	Pomerooy	Eastern Ohio
Sized grades.....	\$3.05	\$2.80	\$3.05	\$2.60
Mine-run.....	2.80	2.55	2.80	2.35
Screenings.....	2.45	2.30	2.45	2.10

#### CINCINNATI

Continued steady and heavy demand for coal of all sorts is reported, with good conditions in all near-by fields, indicated by record-breaking loadings last month.

While in some quarters pessimism is felt and expressed over the local fuel situation, especially in view of the belief that all West Virginia coal may be diverted eastward in order to satisfy the deficiency in receipts in that section, the general situation is all that could be asked, everything considered. Demand from all quarters remains heavy, and shipments are going forward to the Lakes in large volume. Domestic consumers in this section are still in the market for their winter requirements, and dealers are insistent, in consequence, in their demand for fuel with which to take care of their customers. Considerable receipts by the river have helped out city dealers, but those in the country and near-by towns are finding some difficulty in securing coal. The same is true to a considerable extent of large industrial consumers, as to fuel storage, although so far no complaint has been heard on the score of current supplies. It is generally realized that it is the supply of coal for industrial purposes next winter which will furnish the principal difficulty of the fuel authorities, which is one reason why every effort is being made to get all other demands out of the way before winter comes, in order that the entire available supply may then be devoted to the needs of industrial consumers.

With the bulk of domestic consumption taken care of by unprecedentedly early and complete summer storage, and with the North and the Northwest well cared for by the present heavy movement of coal both by rail and the lakes, it is felt that the entire Middle West, including this city and its immediate vicinity, will face the winter season in much better shape than was the case last year, and with the reasonable expectation that the winter will not be anything like as severe as last winter.

#### LOUISVILLE

Production for eastern and western Kentucky field about the same, with labor still scarce and cars hard to obtain. Retailers are beginning to catch up on domestic stocking and are offering two-day deliveries at the present time. Steam demand continues fair.

The labor situation in the Kentucky fields has been somewhat better during the past two weeks, due to the exceedingly hot weather, the fact that crops are made, and that men who have been farming are glad to get back to the cooler mines. Retailers have had much trouble in keeping men and teams going during the hot weather, labor refusing to work above ground. However, this same weather has resulted in a letting up of the domestic stocking demand, as no one thinks much of cold weather with the thermometer around the century mark, as has been the case during the greater part of August. Mines expect to start losing labor to the agricultural demand in a few weeks, especially in western Kentucky, where much negro labor will start picking cotton.

In eastern Kentucky many of the wagon mines are now using boxcars for loading and are getting out a much better volume of coal, some of which is reaching the local points, but much of which is being bought up by jobbers and large miners for outside points.

#### BIRMINGHAM

Local market active, with steam demand apparently a little easier. Domestic trade stiff. Production off from the high record of recent date. Car shortage being felt along with failure of miners to work regularly.

Inquiries for steam are good in this market, the tonnage desired being in excess of that available by a large margin, but reports indicate that consumers are evidently in some better shape of late, as they are not pressing their demands quite so insistently as heretofore. The extremely hot weather of the past week has not weakened the ardor of the domestic user to provide a supply for the wintry blasts to come, and trade is strong in both wholesale and retail circles. More coal was stored, according to official figures, during



substantial increase there is no surplus being accumulated at the docks. Some large consumers are more fortunate, however, and have been able to store small stocks to carry them over a few weeks or a month. With demands for more coal increasing owing to added industries, it is becoming more apparent that there is going to be a serious situation next winter unless something is done to increase production. Operators believe that there will be no further depletion in labor now that President Wilson has spoken and with an improvement in car supply they will be in a better position to maintain production.

There has been a further classification in Tidewater pools. Pools Nos. 13 and 29 have been eliminated and combined with Pool No. 18. Other changes are in contemplation. Many of the mines are being examined by the Navy Department, and this it is believed will result in many changes in the make-up of the pools.

Bunkering fuel is not in large supply in all of the pools. Some slight delay in loading is reported due to the failure of sufficient coal in the individual pool from which a vessel is being coaled, the rules providing that the coals from the various bunker pools must not be mixed. Owing to the increased shipping and the demand for bunker coals, it is believed that when the new classifications are announced by Tidewater Coal Exchange that many of the coals now classified as commercial coals will be found in the bunker coal list.

There was a decrease of 350 cars in the dumpings for the week ended Aug. 16, 6413 cars having been dumped as against 6763 cars the previous week. This market continues to be without free coals, practically all the coal coming here being spoken for before shipment.

Current quotations, based on Government prices at the mines, net ton, f.o.b. tidewater, at the lower ports, are as follows:

	Mine Gross	F. o. b. Gross
<b>Central Pennsylvania:</b>		
Mine-Run, prepared or slack.....	\$3.30	\$5.45
Upper Potomac, Cumberland, and Piedmont Fields:		
Run-of-Mine.....	3.08	5.23
Prepared.....	3.36	5.51
Slack.....	2.80	4.95

Quotations at the upper ports are 5c. higher.

#### PHILADELPHIA

Anthracite continues quiet, but demand heavy. Some improvement in shipments. New conservation measures. Fall prices cause anxiety on part of dealers. Stove and chestnut in strongest demand. Retail labor situation serious. Steam coals all taken. Some culm activity. Bituminous shipments in fair volume. Car supply complaint continues.

**Anthracite**—The week has been the quietest for some time. Probably the most encouraging sign is that shipments actually do improve in a small measure, and this has been the trend for several weeks now; as a consequence the trade continues to display a measure of optimism. While it is claimed the dealers will have some trouble satisfying their trade all fall, yet there are those who profess to believe that they will be in even better position by the time cold weather arrives. They further express the opinion that the troubles of last winter will not be repeated. The announcement of the local administrator that the dealers had stored 817,988 tons in the cellars of their customers up to Aug. 1 is encouraging. This tonnage is far in excess of that delivered up to the same period last year. Deliveries so far this month have been heavy and have considerably reduced the 833,157 tons reported by Mr. Lewis' office as being undelivered up to Aug. 1. In the suburbs the improved conditions are also becoming noticeable, as more than one dealer has got his deliveries in such shape that they are actually putting some coal into the cellars of new customers, a situation that none of them expected until late in the fall.

Stove and chestnut continue to be the short sizes locally and for some reason the former particularly so. Egg is short in the suburban sections, but comparatively easy in the city yards. A number of dealers are glad to see small stocks of pea accumulating. Buckwheat is noticeably easier, a situation that is not likely to continue beyond the present month.

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and 1100 tons for Marinette. Freight rates remain at 48c. to Duluth, 50c. to Manitowoc, 55c. to Milwaukee, 60-65c. to Chicago and \$1 to Marinette.

#### CLEVELAND

Definite orders have been issued to coal operators not to make further shipments to industrial consumers known to have fair-sized stock piles on hand. Circulars listing concerns able to run until Oct. 1 on their present stocks are being issued. The lake trade continues to fall behind the schedule, and it is feared that the end of August will see the Northwest with more than 2,000,000 fewer tons of bituminous on the docks than was planned. To provide larger tonnages for the Northwest, retail dealers here are being cut to 15 and 20 per cent. of the requirements.

**Bituminous**—The outlook both as regards industrial and domestic trade has taken a decided slump in the past week. Circulars are being issued by D. F. Hurd, regional director for the United States Fuel Administration, bearing the names of industrial concerns known to have ample stocks on hand. In some instances operators are directed not to ship certain concerns any more coal until after Oct. 1—in a few instances shipments have been cut off only until Sept. 10.

Investigators for the administration are said to have gone into the yards of practically every concern in Cleveland and northern Ohio and photographed the stock piles. One large steel works in Cleveland is said to have between 180,000 and 190,000 tons of bituminous on hand, a 60-day supply at the least. Another northern Ohio iron and steel interest is said to have been found with more than 300,000 tons of bituminous stored. These instances have led the administration to feel that concerns should be compelled to use their stock piles in order to permit a greater diversion of coal to the Northwest while navigation on the Great Lakes is still possible.

Domestic users are informed that once the lake season ends their supplies will become adequate. One result of this situation has been to augment the domestic demand for coke. Complaints against the car shortage on the Pennsylvania R. R. in the No. 8 district have resulted in the arrival of a fuel administration investigator here. Car supply on the Pennsylvania for the first 10 days of August was only 53 per cent. of normal. The road, it has been ascertained, has been according mines shipping railroad fuel a 100 per cent. supply, while other mines were forced to take the leaveings. Pennsylvania officials here claim ignorance of any order that car supply is to be distributed evenly, whether or not the mine is putting out railroad fuel, and Pennsylvania officials at Pittsburgh will be called upon to explain, it is said. Considerable complaint is arising, too, in regard to irregular shipments.

Many concerns report they get no cars one day and twice the normal number the next. As a result, the unloading force is disrupted, and much demurrage must be paid. This tends to decrease car efficiency, which is an even more serious condition. According to the report of the secretary of the Pittsburgh Vein Association of Ohio, operators who belong to the association shipped 6277 cars in the week ended Aug. 7, of which 3617 went to the lake trade, 1235 to railroads, 1062 to Ohio, 261 to Michigan and Indiana and 102 to Canada. The 3617 carloads that went to the lake trade are little more than half of the 7200 cars required each week under the order calling for 1200 cars a day from the Pittsburgh district for the Northwest. Car supply has been good on every road except the Pennsylvania. Power supplies are failing mines in southern Ohio and serious trouble is feared. The corporation that furnishes electricity to many of the mines in the No. 8 district is said to be encountering difficulties. The shipments for the week ended Aug. 7 were made as follows: Baltimore & Ohio, 3044 cars; Pennsylvania, 1621; Wheeling & Lake Erie, 1474, and New York Central, 138.

**Lake Trade**—Shipments of bituminous grow more and more disappointing. Many operators fear the Northwest will not get over 25,000,000 tons, instead of the 28,000,000 aimed at. The first 11 days of August saw lake shipments of bituminous—exclusive of vessel fuel—only 1,535,996 tons. The Fuel Administration's schedule for August calls for 4,900,000 tons. July closed 1,000,000 tons behind, and it appears that August will add about 1,250,000 tons to this deficit. For the week ended Aug. 17 the estimate of shipments to the Northwest is 1,020,000 tons. The Pittsburgh district has not responded to the 1600-cars-a-day order by far.

#### DETROIT

**Shortage of domestic coal supply remains an alarming factor of the market. Fuel Administration affords little relief. Lake movement gains.**

**Bituminous**—Facing a contingency which may lead to serious hindering of production on war contracts by departure of workers from Detroit, local coal jobbers and representatives of large industrial plants are endeavoring—so far with little success—to increase the present movement of domestic coal into the city and obtain an addition to the inadequate allotment of 601,000 tons of anthracite allowed Detroit.

Headed by J. J. Crowley, president of the Detroit Board of Commerce, and accompanied by W. K. Prudden, Michigan Fuel Administrator, a committee of Detroit manufacturers representing concerns engaged on large contracts for the Government, spent most of last week in Washington appealing to the Fuel Administration, the War Industries Board and the Director of Railroads for action to relieve the situation.

The committee appears to have made little progress beyond receiving a promise from the Fuel Administration that a campaign would be opened at once to increase the movement to Detroit of bituminous coal suitable for domestic use. It was informed no addition to the city's allotment of anthracite could be made.

Bituminous coal now coming into Detroit in fair volume, consists for the greater part of mine-run, which is not adapted to use in the hot-air furnace heating plants and base-burner stoves, which predominate in the homes of the city. While the present supply of bituminous provides adequately for present needs of steam plants, little surplus is available for reserves.

**Anthracite**—No improvement in movement of anthracite has developed. Shipments received on some days fall below 20 cars, while the average is probably below 30 cars daily for the month. Manufacturers say many of their employees will go to cities where they can be assured fuel for winter needs unless the city's allotment of anthracite is increased and a larger movement stimulated.

**Lake Trade**—Coal is moving rather more freely to lake loading docks and the shipments to ports at the head of the lakes have been attaining a higher volume in August than in July, though many carriers are still making the upbound trip without cargo. Shipments have not yet reached the magnitude necessary to realize the shippers' program of 4,900,000 tons for the month.

#### COLUMBUS

The lake trade is now the principal activity in the coal industry. Some coal is being diverted for domestic and steam purposes, but the amount is not large. Production is fairly good.

The principal feature of the coal trade in Ohio, is the activity in the lake traffic. Under orders from the Federal Fuel Administration a large tonnage is being rushed to the Northwest and every effort is being made to fill the requirements in that section earlier than usual. It is hoped that the requirements can be filled by Oct. 1 after which the product of Ohio and West Virginia mines can be diverted to domestic and steam uses. The vessel movement is active, and little time is lost in handling either coal or ore. Reports show that the coal is being moved off the docks of the upper ports, thus avoiding congestion.

The steam trade is rather quiet, although a certain amount of screenings is being diverted to steam business, which helps to relieve the situation. Most of the larger steam users had succeeded in laying in a supply of coal to last for some time and thus are not suffering. Smaller steam users have sufficient fuel for the present. Most of the public service institutions have made arrangements for their coal supply.

The domestic trade is also quiet, although dealers are still busy making deliveries. Surplus stocks are rapidly being depleted. Practically no Pocahontas is now available and only a limited amount of West Virginia grades is arriving. In fact it is only the smaller mines that have no lake connections that are supplying the domestic trade. Retail prices are firm at the levels which have prevailed for some time. Dealers are beginning to get anxious and are making inquiries if the priority order may soon be modified.

Production has been increased slightly with a better car supply and more plentiful labor. Patriotic meetings held in many mining sections are having their effect in increasing the output. Lack of motive power on some of the railroads caused a temporary car shortage, but steps are being taken to relieve that situation. On the whole the output has been between 75 and

85 per cent. in all of the producing fields of the state.

Prices on short tons f.o.b. mines are as follows:

	Hocking Thin Vein	Hocking Thick Vein	Pomerooy	Eastern Ohio
Sized grades.....	\$3.05	\$2.80	\$3.05	\$2.60
Mine-run.....	2.80	2.55	2.80	2.35
Screenings.....	2.45	2.30	2.45	2.10

#### CINCINNATI

Continued steady and heavy demand for coal of all sorts is reported, with good conditions in all near-by fields, indicated by record-breaking loadings last month.

While in some quarters pessimism is felt and expressed over the local fuel situation, especially in view of the belief that all West Virginia coal may be diverted eastward in order to satisfy the deficiency in receipts in that section, the general situation is all that could be asked, everything considered. Demand from all quarters remains heavy, and shipments are going forward to the Lakes in large volume. Domestic consumers in this section are still in the market for their winter requirements, and dealers are insistent, in consequence, in their demand for fuel with which to take care of their customers. Considerable receipts by the river have helped out city dealers, but those in the country and nearby towns are finding some difficulty in securing coal. The same is true to a considerable extent of large industrial consumers, as to fuel storage, although so far no complaint has been heard on the score of current supplies. It is generally realized that it is the supply of coal for industrial purposes next winter which will furnish the principal difficulty of the fuel authorities, which is one reason why every effort is being made to get all other demands out of the way before winter comes, in order that the entire available supply may then be devoted to the needs of industrial consumers.

With the bulk of domestic consumption taken care of by unprecedentedly early and complete summer storage, and with the North and the Northwest well cared for by the present heavy movement of coal both by rail and the lakes, it is felt that the entire Middle West, including this city and its immediate vicinity, will face the winter season in much better shape than was the case last year, and with the reasonable expectation that the winter will not be anything like as severe as last winter.

#### LOUISVILLE

Production for eastern and western Kentucky field about the same, with labor still scarce and cars hard to obtain. Retailers are beginning to catch up on domestic stocking and are offering two-day deliveries at the present time. Steam demand continues fair.

The labor situation in the Kentucky fields has been somewhat better during the past two weeks, due to the exceedingly hot weather, the fact that crops are made, and that men who have been farming are glad to get back to the cooler mines. Retailers have had much trouble in keeping men and teams going during the hot weather, labor refusing to work above ground. However, this same weather has resulted in a letting up of the domestic stocking demand, as no one thinks much of cold weather with the thermometer around the century mark, as has been the case during the greater part of August. Mines expect to start losing labor to the agricultural demand in a few weeks, especially in western Kentucky, where much negro labor will start picking cotton.

In eastern Kentucky many of the wagon mines are now using boxcars for loading and are getting out a much better volume of coal, some of which is reaching the local points, but much of which is being bought up by jobbers and large miners for outside points.

#### BIRMINGHAM

Local market active, with steam demand apparently a little easier. Domestic trade stiff. Production off from the high record of recent date. Car shortage being felt along with failure of miners to work regularly.

Inquiries for steam are good in this market, the tonnage desired being in excess of that available by a large margin, but reports indicate that consumers are evidently in some better shape of late, as they are not pressing their demands quite so insistently as heretofore. The extremely hot weather of the past week has not weakened the ardor of the domestic user to provide a supply for the wintry blasts to come, and trade is strong in both wholesale and retail circles. More coal was stored, according to official figures, during



July than in any previous month this season.

Alabama coal men are expecting a new schedule of prices from the fuel administrator in the near future, but no intimation has been given as to changes or adjustments to be made other than that there will be a reclassification of the mines to some extent. It appears certain that some more repressive measures will have to be adopted by the fuel administration than those now in vogue to enforce better working schedules by mine workers if coal production is to be materially increased and maintained on anything approaching a maximum capacity in this district. Men lay out from work in large numbers regularly and also fail to work full shifts in many instances. Shortage of cars has crippled production to some extent in the past week or so, most all lines being short of equipment.

## Coke

### CONNELLVILLE

**Fuel Administration allocations. Market transactions in foundry coke. More by-product and less beehive coke.**

The Fuel Administration continues to allocate furnace coke orders to such an extent that practically no offerings come upon the market. A close watch is kept upon the situation and cases of furnaces stocking coke do not as a rule continue long until the operator is given an allocation to ship the surplus coke elsewhere. Of ordinary open market transactions there are practically none in the case of furnace coke. Foundry coke, on the other hand, continues to be offered in considerable volume. On the whole foundry coke shipments are probably well above normal. The operators have plenty of 72-hour coke and it pays to ship the coke for foundry use as long as it can be sold. Frequently a brokerage is paid by the operator. Many of the foundries are no doubt stocking coke, but the total taken out of the situation is not large, as foundry coke consumption is vastly less than furnace coke consumption.

The Youngstown Sheet and Tube Co. has practically completed putting in 51 of its new byproduct ovens, with the second 51 to follow in a few weeks. Unlike the starting of the Steel Corporation's new plants at Cleveland, Lorain and Clairton, the additional byproduct production at Youngstown directly releases Connellsville coke, which as released goes to other consumers. The contracts were closed about three months ago, shipments to begin upon the completion of the new Youngstown ovens and to run to the end of the year. An interesting question is how much the starting of byproduct ovens by the Steel Corporation will reduce its coke production in the Connellsville region. Unless the corporation has been short of coke it could correspondingly decrease its Connellsville production, unless it should sell the coke released, while on the other hand, it might not be able to provide the coal for the new byproduct operations except by decreasing beehive operations. The Cleveland and Lorain plants do not necessarily use Connellsville coal but would use it if no other coal could be had. The Clairton operation was designed to use Connellsville coal exclusively, but to be shipped by water, and for the purpose some of the river mines were enlarged. While one comparison does not prove the case it is an interesting fact that there has been a decrease in Connellsville output which bears a striking resemblance to the new byproduct capacity put in operation.

The "Courier" reported maximum production by furnace ovens in the Connellsville and lower Connellsville region at 210,760 tons in the week ended July 13 and at 177,800 tons in the week ended Aug. 10, a decrease of 32,960 tons. At the same time the merchant oven production only changed from 142,710 tons to 141,210 tons, a decrease of 1500 tons. This would strongly suggest that some special influence was felt, neither car shortage nor labor shortage, as such influences would have affected merchant ovens the same as furnace ovens. The new byproduct ovens the Steel Corporation has lately put in are 180 ovens at Cleveland, which made a little coke late in May; 104 ovens at Lorain, very recently, with 104 ovens more due in about 30 days; and 128 ovens at Clairton, with four similar batteries due at intervals during the remainder of the year. The ovens started total 412, and while nominal ratings are higher, such ovens can generally be counted on for about 4200 tons a year per oven, or about 80 tons a week, so that their output is precisely 80 tons each, 32,960 tons weekly, and the

decrease reported was precisely that, down to the last ton.

Owing to the activity of the Fuel Administration the furnace coke market is practically closed, but allocations go at the set price of \$6. Foundry coke sells at the \$7 set price, sometimes with a brokerage allowed by the operator, and crushed, over 3-in., remains at \$7.30, all prices being per net ton at ovens. Screenings from old dumps when well prepared and over 3 in. bring \$6.50 in the open market.

The "Courier" reports production in the Connellsville and Lower Connellsville region in the week ended Aug. 10 at 319,010 tons, a decrease of 21,970 tons.

**Buffalo**—The supply of coke is scant, but the local furnaces manage to get what they must have. So far the Government authorities have not thought it necessary to make any arbitrary distribution rules in the coke trade and are not commandeering it from this smelting center, but none of it is coming into the hands of jobbers, who try to content themselves with a moderate amount of breeze coke from the local by-product ovens, selling it sometimes for less than the Government price, which is \$4.34 at the ovens. Iron ore receipts for the week were 330,690 gross tons, a large amount.

## Middle Western

### MILWAUKEE

**Coal supply coming forward satisfactorily. Dealers looking for an advance in soft coal soon.**

The coal supply for the Milwaukee district is coming on apace, and unless for some unforeseen reason there should be a let-up in the movement by lake, the close of navigation will find the full allotment of anthracite and bituminous coal on the docks and in process of transshipment. A close rein is kept both on the movement to interior points and on the supply to city consumers, in the interest of an equitable distribution and to avoid a repetition of some of the experiences of last winter.

Some uneasiness was caused throughout Wisconsin by the action of Federal Fuel Administrator Garfield restricting the consumption of soft coal in Illinois, but State Fuel Administrator Fitzgerald hastened to assure manufacturers that there was no danger that a similar order would be issued in regard to Wisconsin. Illinois is a soft coal consuming state, and the cheapness of this class of fuel in the past has engendered wasteful methods on the part of power plants and householders which the fuel administration now desires to rectify.

Receipts for August up to the time of making this report aggregate 26,786 tons of hard and 306,817 tons of bituminous, making the record up to that time since the opening of navigation on May 1, when the docks were absolutely cleaned up, 272,470 tons of anthracite and 1,685,169 tons of bituminous. During the months of May, June and July rail receipts amounted to 454 tons of anthracite and 60,230 tons of bituminous, against 288 tons of the former and 272,109 tons of the latter in 1917.

### ST. LOUIS

**An unusually quiet market on everything, with steam sizes heavy. Warm weather has depressing effect. Labor shortage severe from the mines to retail delivery. Water shortage continues. Car supply poor. Transportation continues bad.**

The local market is an unusually quiet one. The extremely warm weather of the past couple of weeks had a serious effect in the retail end of the coal business, and many coal men have found themselves with half of their equipment idle on account of their men quitting for easier tasks.

In a general way, however, the retail business is easing up, excepting on Carterville coal. The domestic trade is practically taken care of on Standard sizes, there is a little Mt. Olive unfilled, and a considerable tonnage of Carterville.

Byproduct coke is hard to get and dealers are behind on that, but gas house coke is pretty well up. Figures compiled by the St. Louis Fuel Committee show that St. Louis is unquestionably the best situated city in the country today in the matter of retail storage coal, and perhaps worst off in the matter of steam storage.

Reports from the Carterville field the past week are depressing. In addition to the water shortage, which has been affecting all mines, the power furnished by the Public Service Co. in southern Illinois is permitting the mines to work about 2 1/2 days a week. A meeting of the operators in Chicago this week was held for the purpose

of taking some action relative to bringing in Keokuk power through the St. Louis gateway, and this will likely be done. It is understood that this matter has been taken up with Washington and the complaint was made that mines are forced to close daily, in periods from 10 min. to 5 hours, and in many instances the largest mines in the field have been closed for 2 or 3 days at a time.

The car shortage the present week is unusually severe, and on the Iron Mountain for four days straight there was no equipment at some mines. The movement on this road is exceptionally bad, and the Illinois Central fares but a little better.

Labor conditions in this field seem to grow worse, and it is evident that the Government must in the very near future take some steps to keep intact the mining organizations if the operators are expected to keep up anywhere near the tonnage demanded of them.

Similar conditions exist in the Duquoin field. The railroads still continue to take heavily in railroad fuel from both of those fields, in spite of all that has been said and the pleas and the protest from the general public and from those interested in seeing that this quality of coal goes where it is best suited.

The Mt. Olive field has a fairly good car supply and labor supply that is not bad and a tonnage produced that is about equal to the demand. It is the one field in the state where there seem to be no troubles that cannot be easily overcome.

The Standard field presents the same old trouble of having an overproduction of either one or the other grades. At the present time there is an overproduction of screenings and no place to move them, and there is an abundance of lump. The screening movement to Chicago is fairly good and all surplus lump and egg is going to Michigan. If it were not for this the Standard market would be glutted and mines would be idle. These prices are off, screenings being sold as low as \$1.55 and \$1.60, and lump about \$2.35 to \$2.40 for 2 in., while the 6 in. lump and egg hold up to \$2.55. The car supply in this field is bad, transportation is slow, and car distribution on the Illinois Central still continues bad.

There is a water shortage here that is affecting many of the mines and some of the mines are almost down to one-fourth of their former tonnage on account of labor. In view of the fact that there is a surplus of screenings, which is used by the Union Electric Light and Power Co., the lightless night order is in effect here and is being rigidly enforced. On the surface this appears to be a farce, for unless these screenings are consumed in the home market they remain on track at the mine and prevent work, and their quality is such that they will not move it to the far off markets. The same thing applies to the skip and stop proposition for the street cars. The general public for the first time in many years is becoming somewhat vexed at local conditions. With an abundance of this steam coal, to such an extent that the railroads are blocked and the mines are almost idle on account of this surplus, St. Louis is being deprived of some of its common rights because the eastern part of the country is short of coal and the quality of the coal here does not justify its transportation east.

The Board of Education has announced that 63,000 tons of coal have been stored for the Public Schools, and its consumption is estimated at 70,000 for the 142 school buildings. Last winter St. Louis was the only large city that did not have to close its schools. There are no eastern coals coming in and a very light tonnage of Arkansas.

The circular prices for Illinois coals here are:

	Williamson and Franklin County	Mt. Olive and Staunton	Standard
6-in. lump...	\$2.55@2.70	\$2.55@2.70	\$2.40@2.70
3x6-in. egg...	2.55@2.70	2.55@2.70	2.35@2.55
2x3-in. nut...	2.55@2.70	2.55@2.70	2.35@2.55
No. 2 nut...	2.55@2.70	2.55@2.70	.....
No. 3 nut...	2.55@2.70	2.55@2.70	.....
No. 4 nut...	2.55@2.70	2.55@2.70	.....
No. 5 nut...	2.05@2.20	2.05@2.20	.....
2-in. scrags...	2.05@2.20	2.05@2.20	1.25@1.50
3-in. lump...	.....	.....	2.25@2.40
2-in. lump...	.....	.....	2.25@2.40
Steam egg...	.....	.....	2.25@2.40
Mine run...	2.35@2.50	2.35@2.50	1.85@2.00
Washed:			
No. 1.....	2.75@2.90	2.75@2.90	.....
No. 2.....	2.75@2.90	2.75@2.90	.....
No. 3.....	2.55@2.75	2.55@2.75	.....
No. 4.....	2.55@2.75	2.55@2.75	.....
No. 5.....	2.05@2.20	2.05@2.20	.....

Williamson and Franklin County rate is \$1.10; Duquoin field, \$1; Standard and Mt. Olive fields, 95c.